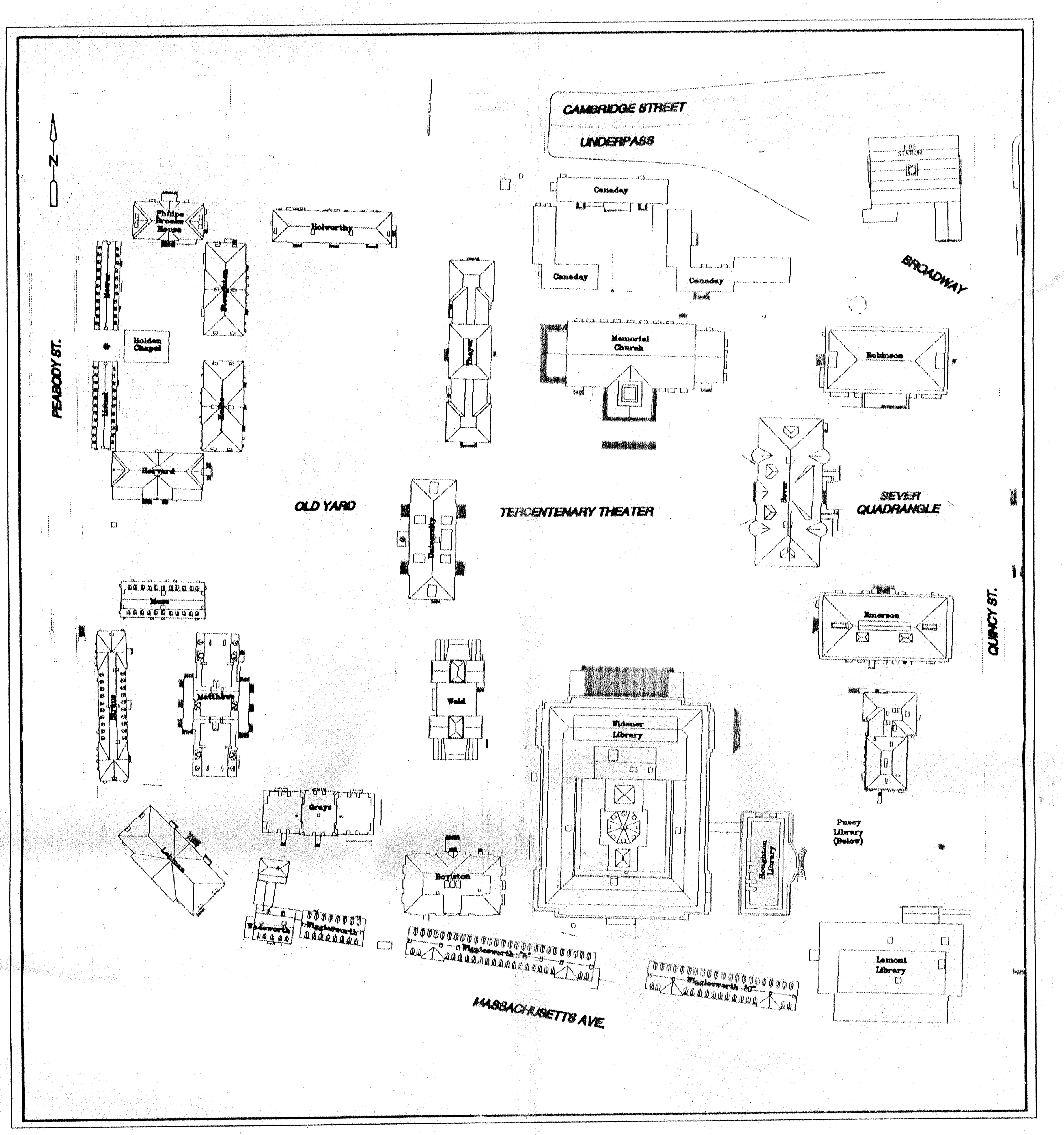
HARVARD UNIVERSITY

UNIVERSITY OPERATIONS SERVICES
ENGINEERING & UTILITIES

EMERSON/ROBINSON STORM DRAINS



100 0 100
SCALE IN FEET

LOCATION PLAN

LIST OF DRAWINGS

SHEET NO.	TITLE
GP	GENERAL PLAN
LGN	LEGEND AND GENERAL NOTES
CSP	CONSTRUCTION SEQUENCING PLAN
1	STORM DRAIN PLAN AND PROFILE I
2	STORM DRAIN PLAN AND PROFILE II
3	MISCELLANEOUS DETAILS I
4	MISCELLANEOUS DETAILS II

MAY 1998

AS - BUILT DRAWINGS

COMMONWEALTH OF MASSACHUSETTS
MATTHEW J. EASTWOOD
CIVIL
No. 37754
REGISTERED PROFESSIONAL ENGINEER
11-23-98

5/14/98

SEVERCVR.dwg

CAMP DRESSER & McKEE INC. · CONSULTING ENGINEERS · CAMBRIDGE, MASSACHUSETTS

70-XXXXX

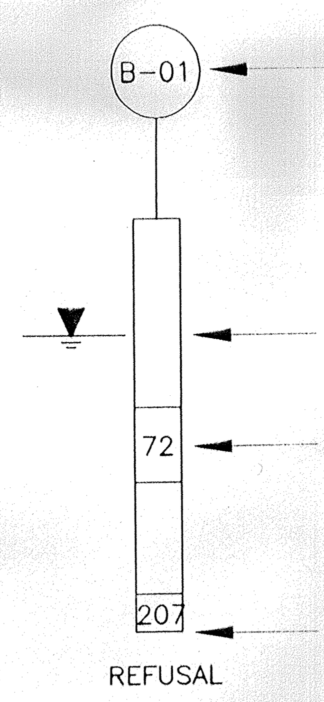
LEGEND

Symbol	Description
27.7 ×	SPOT ELEVATION
	ORDINATE CAST IRON FENCE WITH GRANITE BLOCK FOUNDATION AND BRICK COLUMNS
	GUARD RAIL
	WOOD FENCE
℄	PROPERTY LINE (℄)
	LIMITS OF WORK
B-03 (OW)	EXISTING OBSERVATION WELL
B-05	BORING
TP	TEST PIT
	EXISTING SHRUB
	EXISTING HEDGE
	EXISTING PLANTING
	EXISTING TREE
N 296180 E 759500	COORDINATE LOCATION
1+25	NEW DRAIN AND MANHOLE WITH STATION
	NEW DRAIN SEE OTHER SHEET
CS	EXISTING COMBINED SEWER
SD	EXISTING DRAIN, MANHOLE, AND CATCH BASIN
SS	EXISTING SANITARY SEWER AND MANHOLE
W	EXISTING WATER MAIN WITH HYDRANT AND GATE VALVE
CW	EXISTING CHILLED WATER
E	EXISTING ELECTRICAL VAULT AND DUCT
ST	EXISTING STEAM TUNNEL/STEAM LINE
T	EXISTING TELEPHONE
G	EXISTING GAS
UP	UTILITY POLE
	ELECTRIC LAMP POST
Sign	SIGN POST
	BUILDING FOOTPRINT
Z	NORTH ARROW
	GRANITE CURBING
	PAVED FOOTPATH OR ROADWAY

ABBREVIATIONS

C.I.	CAST IRON	B'FLY VALVE	BUTTERFLY VALVE
C.B.	CATCH BASIN	G.V.	GATE VALVE
C.L.D.I.	CEMENT LINED DUTILE IRON	NGVD	NATIONAL GEODETIC VERTICAL DATUM
D.I.	DUCTILE IRON	PCC	PRESTRESSED CONCRETE CYLINDER
R.C.	REINFORCED CONCRETE	HYD	HYDRANT
P.V.C.	POLYVINYL CHLORIDE	FL	FLOOR
C.M.P.	CORRUGATED METAL PIPE	TS&V	TAPPING SLEEVE AND VALVE
A.C.	ASBESTOS CEMENT	M.H.	MANHOLE
INV. EL.	INVERT ELEVATION		

BORING LOG (TYP.)



GENERAL NOTES

1. PLANS AND TOPOGRAPHY PREPARED FROM AERIAL PHOTOGRAMETRY PREPARED FOR HARVARD UNIVERSITY BY BSC, INC., BOSTON, MA IN 1993. HORIZONTAL DATUM IS NORTH AMERICAN DATUM 1983. VERTICAL DATUM IS NORTH AMERICAN DATUM 1929. ELEVATIONS OF GRAVITY UTILITIES WERE OBTAINED IN NOVEMBER 1993 BY ANEPTEK INC., NATICK, MA.
2. ALL ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM 1929.
3. LOCATIONS OF ALL UTILITIES AND SUB-SURFACE STRUCTURES WERE FROM FIELD SURVEYS CONDUCTED BY THE HARVARD PLANNING GROUP IN 1993 AND FROM RECORDS OF UNIVERSITY UTILITIES, AND WERE CONSIDERED APPROXIMATE BOTH AS TO SIZE, MATERIAL AND LOCATION. CONTRACTOR WAS ADVISED THAT UTILITIES SHOWN ON DRAWINGS WERE INCOMPLETE REQUIRING PRE-EXCAVATION FOR UTILITY LOCATION AND IDENTIFICATION IN ACCORDANCE WITH THE SPECIFICATIONS.
4. BORINGS WERE TAKEN UNDER THE DIRECTION OF CAMP DRESSER & McKEE INC., CAMBIDGE, MA. BY JOHN BOYLE DRILLING, MILTON, MA. APPROXIMATE LOCATIONS WERE SHOWN ON THE PLANS. BORING LOGS WERE APPENDED TO THE SPECIFICATION.
5. NOTES PERTAINING TO NEW WORK WERE SHOWN THUS: NEW NOTE
6. THE EXACT LOCATION OF NEW PIPES, MANHOLES, ETC. WERE DETERMINED IN THE FIELD BY ENGINNER.
7. THE CONTRACTOR DID EXERCISE EXTREME CAUTION TO PREVENT DAMAGE TO ADJACENT TREES AND LANDSCAPPING. EROSION AND SEDIMENTATION CONTROL WAS REQUIRED AND WAS STRICTLY ENFORCED.
8. DAILY CLEANUP WAS REQUIRED ALONG ALL WORK AREAS IN HARVARD YARD. CONTRACTOR WAS REQUIRED TO BACKFILL TRENCHES OR COVER WITH STEEL PLATES, FENCE WORK AREAS AND REMOVE ALL RUBBER TIRED EQUIPMENT FROM HARVARD YARD DURING NON WORKING HOURS.
9. CONTRACTOR WAS ADVISED THAT THE IRRIGATION SYSTEM LOCATED IN HARVARD YARD WAS NOT SHOWN ON THE DRAWINGS. ALL SPRINKLER HEADS AND PIPING DAMAGED DURING CONSTRUCTION WAS REPAIRED AT CONTRACTOR'S EXPENSE.
10. CONTRACTOR DID DETERMINE SIZE, LOCATION AND MATERIAL OF EXISTING UTILITIES PRIOR TO CONST.
11. CONTRACTOR CONFIRMED LOCATIONS, SIZES, MATERIALS AND ELEVATIONS OF EXISTING GRAVITY BUILDING SERVICES PRIOR TO CONSTRUCTION.
12. THE EXISTING WROUGHT IRON PERIMETER FENCE AROUND HARVARD YARD REPRESENTED THE OWNER'S PROPERTY LINE BOUNDRY.
13. CONTRACTOR DID EXERCISE EXTREME CAUTION TO PREVENT DAMAGE TO EXISTING BUILDINGS FENCES AND MONUMENTS.
14. NEW PRECAST MANHOLES WERE 5-FOOT DIAMETER FOR RC STORM DRAINS UNLESS IDENTIFIED OTHERWISE ON THE DRAWINGS.
15. CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING FINAL PAVEMENT FOR TWO YEARS. EXISTING BRICK EDGING ALONG WALKWAYS WILL BE REPLACED BY OWNER.
16. THE CHILLED WATER SYSTEM REPRESENTED A 2 PIPE SYSTEM (INSTALLED IN PAIRS OF PARALLEL PIPES), CONSTRUCTED MAINLY OF ASBESTOS CEMENT PIPE. ONE OF THE PAIRS WAS ENCASED IN AN ENCAPSULATING INSULATION WRAP. EXCAVATION BELOW AC PIPE WAS BACKFILLED WITH FLOWABLE FILL AS SPECIFIED.
17. CONTRACTOR DID MAINTAIN PEDESTRIAN ACCESS TO PATHWAYS AND BUILDINGS AND VEHICULAR ACCESS ON UNIVERSITY DRIVES AT ALL TIMES.
18. CONTRACTOR PROVIDED TEMPORARY REPAIRS TO PAVEMENT AND LAWN AREAS WITHIN ONE WEEK FOLLOWING PIPE INSTALLATION. PERMANENT REPAIRS WILL BE MADE BY OWNER.
19. CONTRACTOR WAS ADVISED THAT EXISTING LIGHTING CONDUITS WERE NOT SHOWN ON THE DRAWINGS. ALL CONDUIT DAMAGED DURING CONSTRUCTION WERE REPAIRED AT THE CONTRACTOR'S EXPENSE.
20. CONTRACTOR WAS ADVISED THAT EXISITNG SEWER AND STORM DRAIN SYSTEMS WERE BE MAINTAINED IN FULLY FUNCTIONAL ORDER AT ALL TIMES.
21. WORK WAS PERFORMED TO PROTECT ALL EXISTING STRUCTURES FROM DAMAGE OR DETERIORATION DUE TO CONSTRUCTION OPERATIONS. THE CONTRACTOR WAS RESPONSIBLE FOR ALL MEASURES NECESSARY TO PROVIDE SUCH PROTECTION.
22. NO EXCAVATION WAS PERFORMED WITHIN THE ZONE OF INFLUENCE OF AN EXISTING FOOTING. THIS ZONE WAS DEFINED AS THE AREA BELOW A 1 VERTICAL TO 1 HORIZONTAL LINE EXTENDED DOWNWARD AND OUTW
FROM THE BOTTOM EDGE OF A FOOTING.
23. TREES REQUIRING PROTECTION UNDER SECTION 02900 ARE SHOWN THUS:

MATTHEW J. EASTWOOD CIVIL No. 37734 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS

11.23.98

REV. NO.	DATE	DRWN	CHKD	REMARKS
△	11/98	MT	MJE	REVISED FOR RECORD DRAWINGS

DESIGNED BY: M. EASTWOOD
DRAWN BY: M. EASTWOOD
SHEET CHK'D BY: M. EASTWOOD
CROSS CHK'D BY: P. HUGHES
APPROVED BY: P. HUGHES
DATE: MAY 1998

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants
CDM

HARVARD UNIVERSITY
ENGINEERING & UTILITIES DEPARTMENT
EMERSON/ROBINSON STORM DRAINS

LEGEND AND GENERAL NOTES

PROJECT NO. 0070-10008
FILE NAME: SEVERLGN
SHEET NO. LGN

0070-XXXXX

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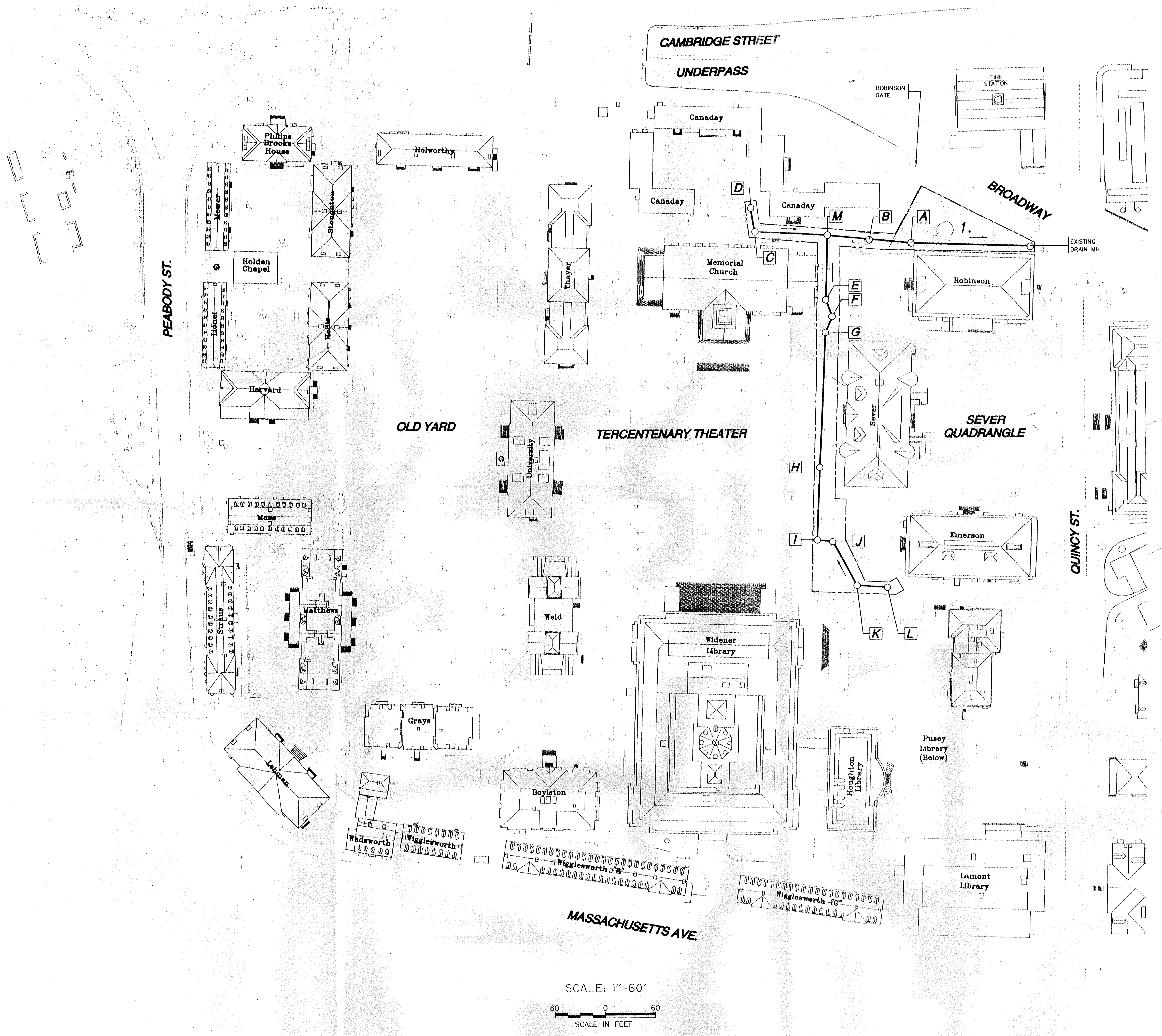

SEQUENCING PLAN LEGEND

- PROPOSED STORM DRAIN (INSTALLED VIA OPEN-CUT)
- LIMITS OF CONSTRUCTION
- C — PROPOSED MANHOLE IDENTIFIER
- PROPOSED CONSTRUCTION LAYDOWN AREA

SEPARATION CONSTRUCTION SEQUENCE & RESTRICTIONS

1. PROPOSED CONSTRUCTION LAYDOWN AREA SHOWN THUS: 1.
2. NO WORK WAS PERMITTED PRIOR TO JUNE 8, 1998.
3. ALL WORK WAS COMPLETED BY AUGUST 1998.
4. CONTRACTOR'S OPERATIONS WERE RESTRICTED TO THE LIMITS OF WORK IDENTIFIED ON THE DRAWINGS. NO EXCEPTIONS WERE MADE.
5. LAYDOWN AREA WAS ENCLOSED WITH A PERMANENT 8-FOOT SCREENED CHAIN LINK FENCE AS SPECIFIED.
6. ALL OPEN TRENCHES (INCLUDING THE EXCAVATOR) WERE FENCED WITH 8-FOOT PORTABLE CHAIN LINK FENCING DURING NON-WORKING HOURS. DURING WORKING HOURS ALL TRENCHES WERE ADEQUATELY PROTECTED (E.G. FENCING AND SIGNAGE) TO ENSURE SAFETY OF THE PUBLIC.
7. CONSTRUCTION WORK WAS PERMITTED BETWEEN THE HOURS OF 8 AM AND 6 PM. WORK WAS PERMITTED MONDAY THROUGH FRIDAY IN JUNE. DURING JULY AND AUGUST, SATURDAY WORK WAS PERMITTED.
8. CONTRACTOR WAS ADVISED THAT SUMMER SCHOOL WAS IN SESSION BETWEEN JUNE 20TH AND AUGUST 7TH. SEVER HALL, ROBINSON HALL, EMERSON HALL, AND CANADAY HALL WERE IN USE DURING THIS PERIOD.
9. THE CONTRACTOR WAS ADVISED THAT ONLY ONE EAST-WEST WALKWAY IN HARVARD YARD WAS ALLOWED TO BE CLOSED AT ANY GIVEN TIME.
10. THE CONTRACTOR WAS ADVISED THAT THE ROBINSON GATE IS THE MAIN EMERGENCY ACCESS TO HARVARD YARD. EMERGENCY ACCESS WAS MAINTAINED THROUGH THIS GATE DURING NON-WORKING HOURS AT ALL TIMES.
11. THE MAIN ROBINSON GATE DRIVEWAY WAS PLATED OVER DURING NON-WORKING HOURS.
12. THE OWNER WAS REQUIRED A SMALL ACCESSABLE PORTION OF THE LAYDOWN AREA FOR EQUIPMENT STORAGE AT ALL TIMES.
13. THE CONTRACTOR WAS ALLOWED TO UTILIZE UP TO TWO CONSTRUCTION CREWS AT A TIME.
14. ALL RUBBER TIRED EQUIPMENT WAS REMOVED FROM THE SITE OR STORED IN THE LAYDOWN AREA DURING NON-WORKING HOURS.
15. A PORTABLE FIELD OFFICE WAS REQUIRED. THE FIELD OFFICE WAS LOCATED IN THE LAYDOWN AREA.
16. THE WORK WAS CONDUCTED IN THE FOLLOWING SEQUENCE:
    - A. ALL TEST PITS WERE PERFORMED BEFORE TRENCHING BEGAN.
    - B. CONSTRUCTION FROM MH G TO MH H (COMPLETED BY JUNE 19TH).
    - C. CONSTRUCTION FROM MH K TO MH JL (COMPLETED BY JUNE 19TH).
    - D. CONSTRUCTION FROM MH H TO MH K.
    - E. CONSTRUCTION FROM MH M TO MH G.
    - F. CONSTRUCTION FROM MH B TO MH C.
    - G. CONSTRUCTION FROM EXISTING DRAIN MH AND MH B.
    - H. ALL STORM DRAIN CONNECTIONS TO THE NEW SYSTEM.
17. THE CONTRACTOR DID PROVIDE AN ALTERNATE BID PRICE TO COMPLETE CONSTRUCTION FROM MH B TO MH C BEFORE JUNE 19TH.
18. BRACED EXCAVATION WAS REQUIRED AS SHOWN ON THE DRAWINGS IN AN EFFORT TO SIGNIFICANTLY MINIMIZE TRENCH WIDTH AT THESE LOCATIONS.

COMMONWEALTH OF MASSACHUSETTS — MATTHEW J. EASTWOOD — CIVIL — No. 37754 — REGISTERED PROFESSIONAL ENGINEER

11.23.98

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	11/98	MT	MJE	REVISED FOR RECORD DRAWINGS

DESIGNED BY: M. EASTWOOD
DRAWN BY: M. EASTWOOD
SHEET CHK'D BY: M. EASTWOOD
CROSS CHK'D BY: P. HUGHES
APPROVED BY: P. HUGHES
DATE: MAY 1998

CAMP DRESSER & McKEE INC.
CDM — environmental engineers, scientists, planners, & management consultants

HARVARD UNIVERSITY
ENGINEERING AND UTILITIES DEPARTMENT

EMERSON/ROBINSON STORM DRAINS

CONSTRUCTION SEQUENCING PLAN

PROJECT NO. 0070-10008
FILE NAME: SEVERCSP
SHEET NO. CSP

0070-XXXXX

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NOTES:
1. CONTRACTOR TO PROTECT EXISTING ROBINSON HALL STONE BUILDING FOUNDATION. SEE GENERAL NOTES 22 AND 23.

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	11/98	MT	MJE	REVISED FOR RECORD DRAWINGS

DESIGNED BY: M. EASTWOOD
DRAWN BY: M. EASTWOOD
SHEET CHK'D BY: M. EASTWOOD
CROSS CHK'D BY: P. HUGHES
APPROVED BY: P. HUGHES
DATE: MAY 98

CAMP DRESSER & McKEE INC.
CDM

HARVARD UNIVERSITY
ENGINEERING & UTILITIES DEPARTMENT
EMERSON/ROBINSON STORM DRAINS

STORM DRAIN PLAN AND PROFILE I

PROJECT NO. 0070-010-DN
FILE NAME: SEVER_01
SHEET NO. 1

0070-XXXXX

Sever_01.dwg C:\JUNK\ 11/20/98 8:39 am

2+45.95 SHEET No. 1

NOTES

1. CONTRACTOR SHALL EVALUATE STEAM TUNNEL AND DETERMINE BEST METHOD OF INSTALLING 12" DI STORM DRAIN BELOW.
2. CONTRACTOR SHALL KEEP ALL CONSTRUCTION OPERATIONS ON THE EASTERLY SIDE OF THE MAIN TRRCENTENARY WALKWAY AS SHOWN

MATTHEW J. EASTWOOD CIVIL No. ... 11-23-98

DESIGNED BY:	M. EASTWOOD
DRAWN BY:	M. EASTWOOD
SHEET CHK'D BY:	M. EASTWOOD
CROSS CHK'D BY:	P. HUGHES
APPROVED BY:	P. HUGHES
DATE:	MARCH 1996

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants

CDM

HARVARD UNIVERSITY
ENGINEERING & UTILITIES DEPARTMENT

EMERSON/ROBINSON STORM DRAINS

STORM DRAIN PLAN AND PROFILE II

PROJECT NO. 0070-010-DN
FILE NAME: SEVER_02

SHEET NO. 2

0070-XXXXX

REV. NO.	DATE	DRWN	CHKD	REMARKS

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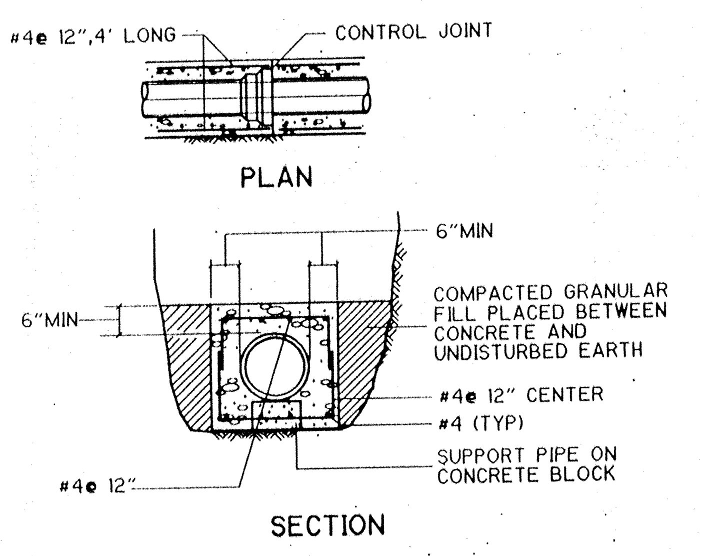
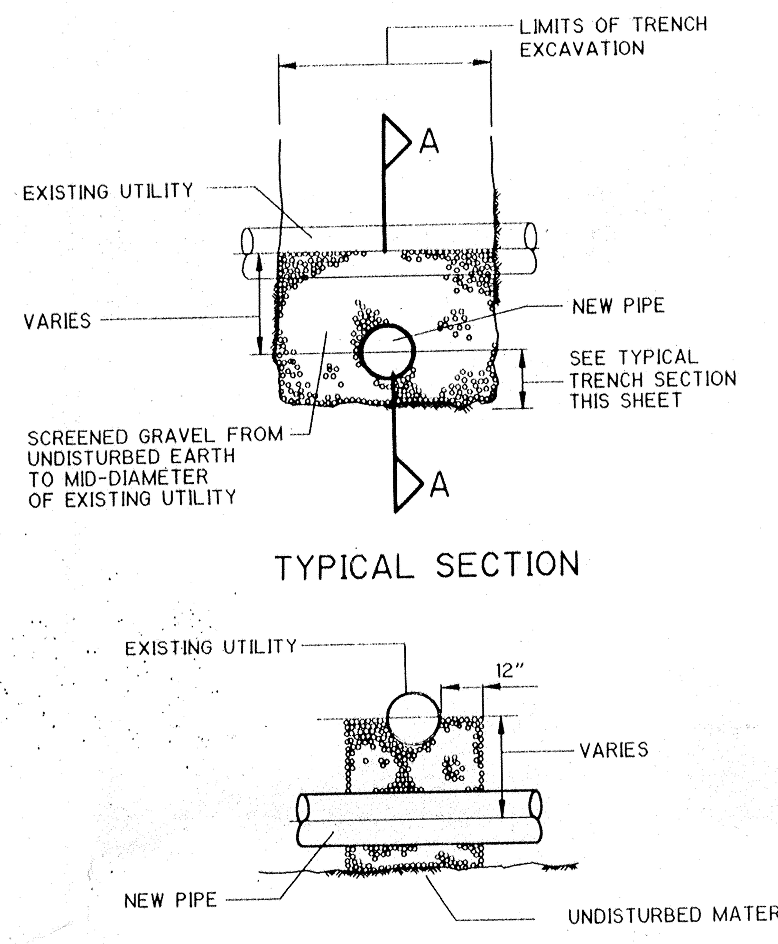


NOTES:

1. CONTROL JOINTS AND PIPE JOINTS FOR ARCHES, AND ENCASEMENT SHALL COINCIDE FOR SPACING. MAX.DISTANCE BETWEEN CONTROL JOINTS SHALL BE 24'±
2. REINFORCING STEEL TO BE USED ONLY WHEN DEPTH OF COVER TO TOP OF SURFACE OF CONCRETE IS 5'-0" OR LESS

CONCRETE PIPE ENCASEMENT DETAIL

NTS



UTILITY CROSSING DETAIL

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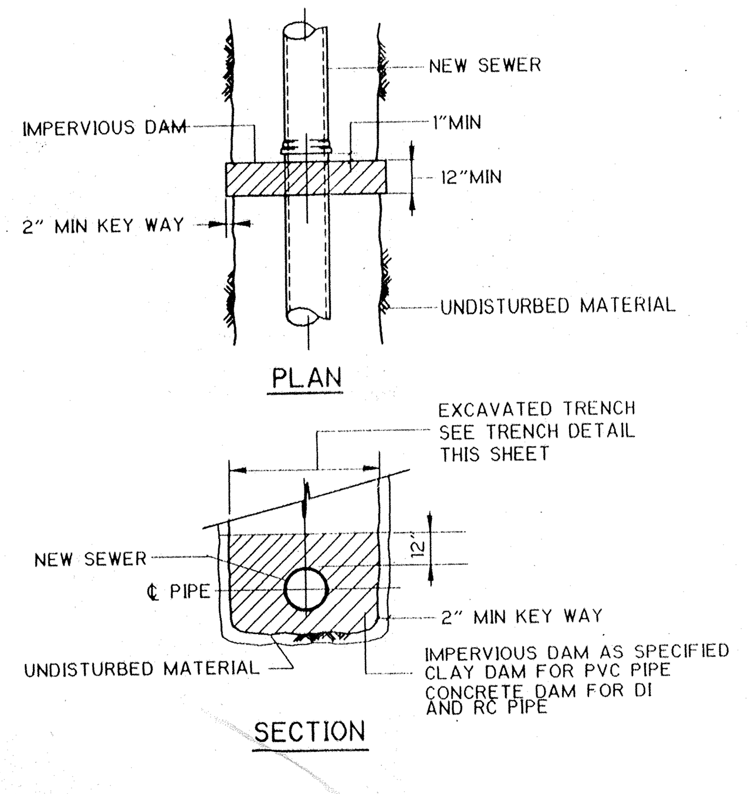

PIPE TRENCH DAM DETAIL

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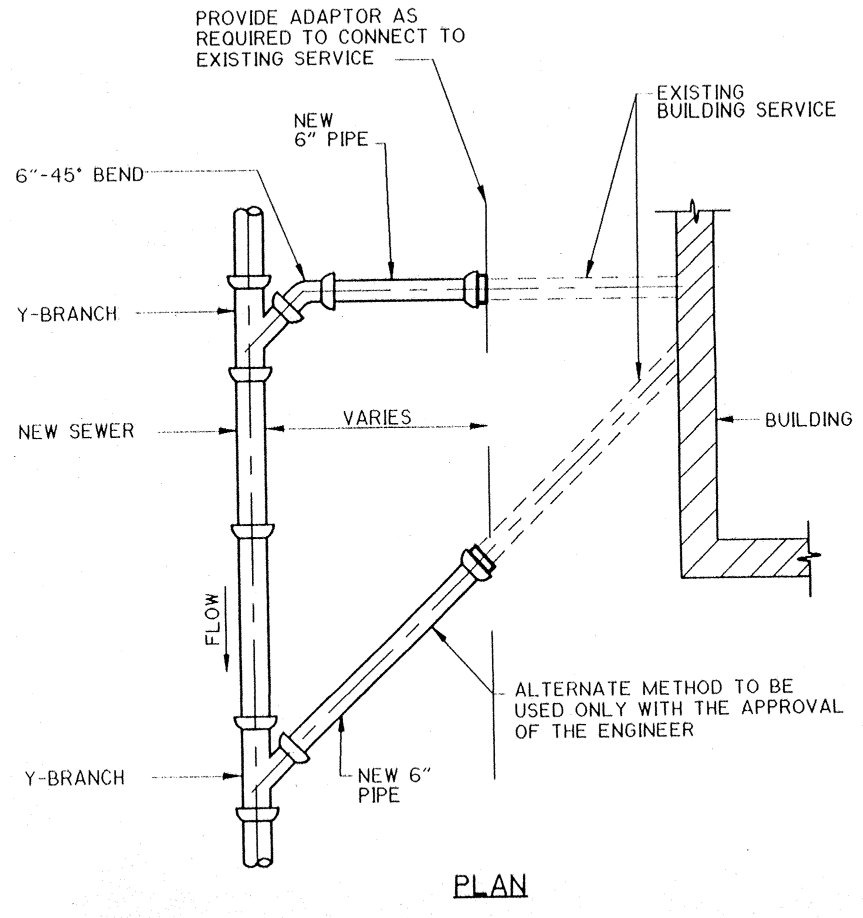

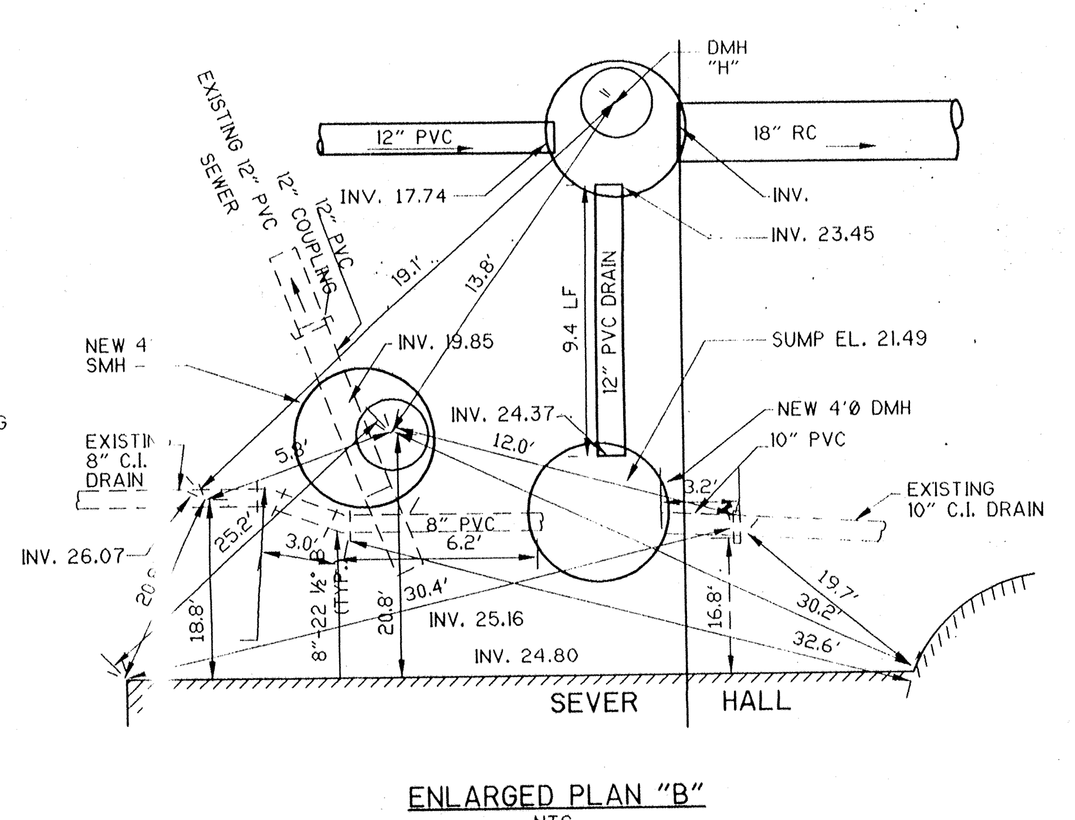

ENLARGED PLAN "B"

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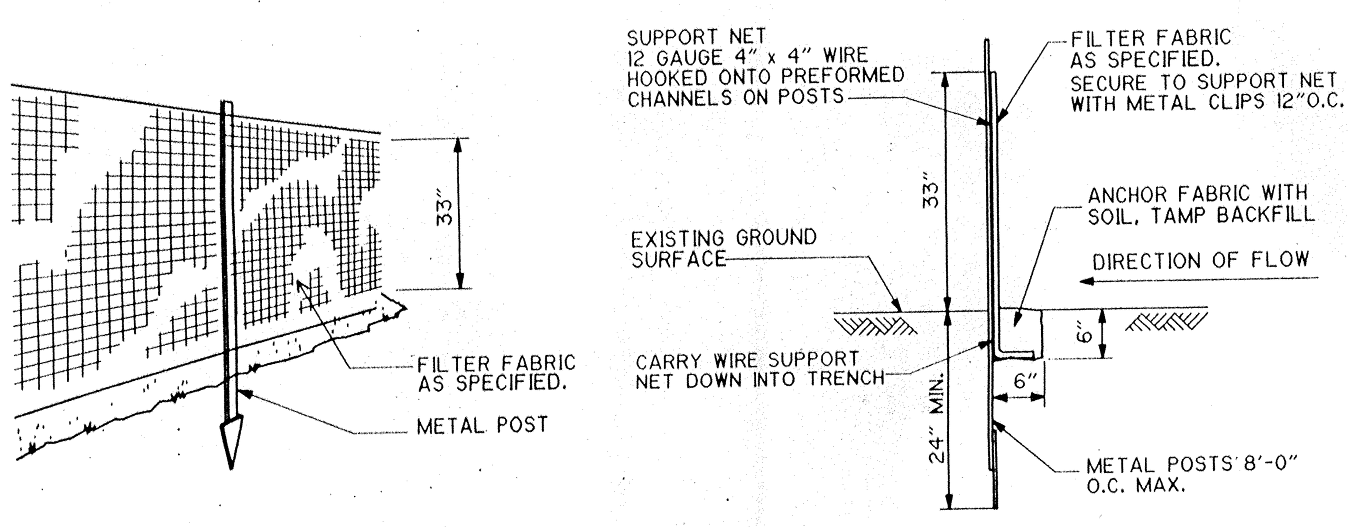
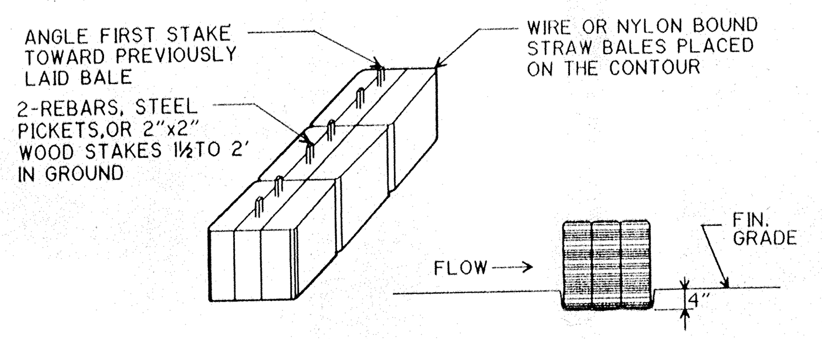


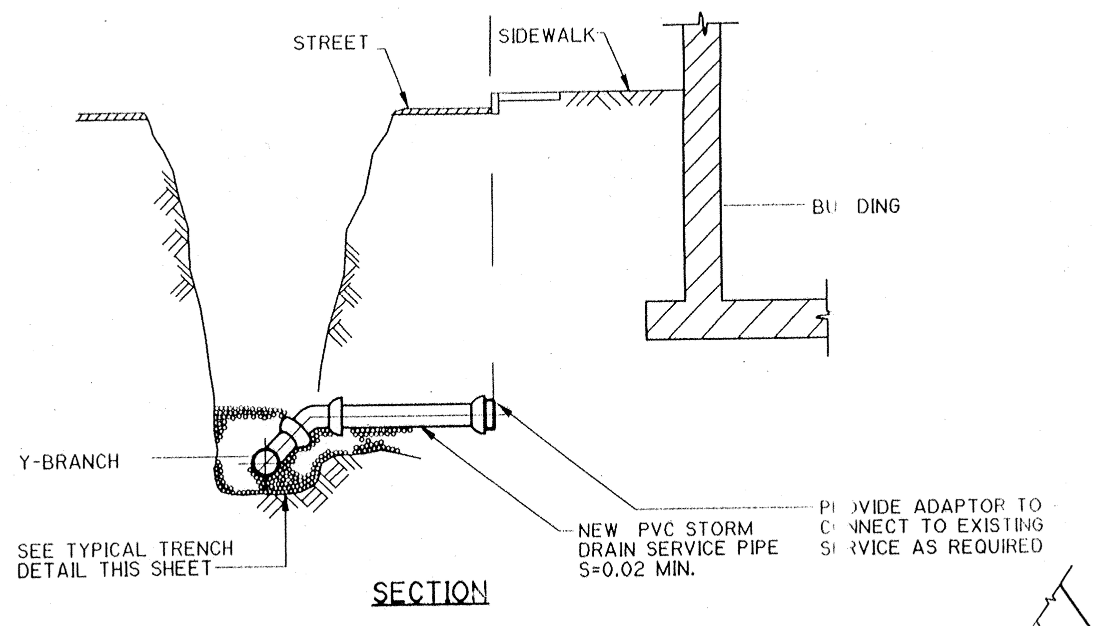
SILT FENCE DETAIL

NTS



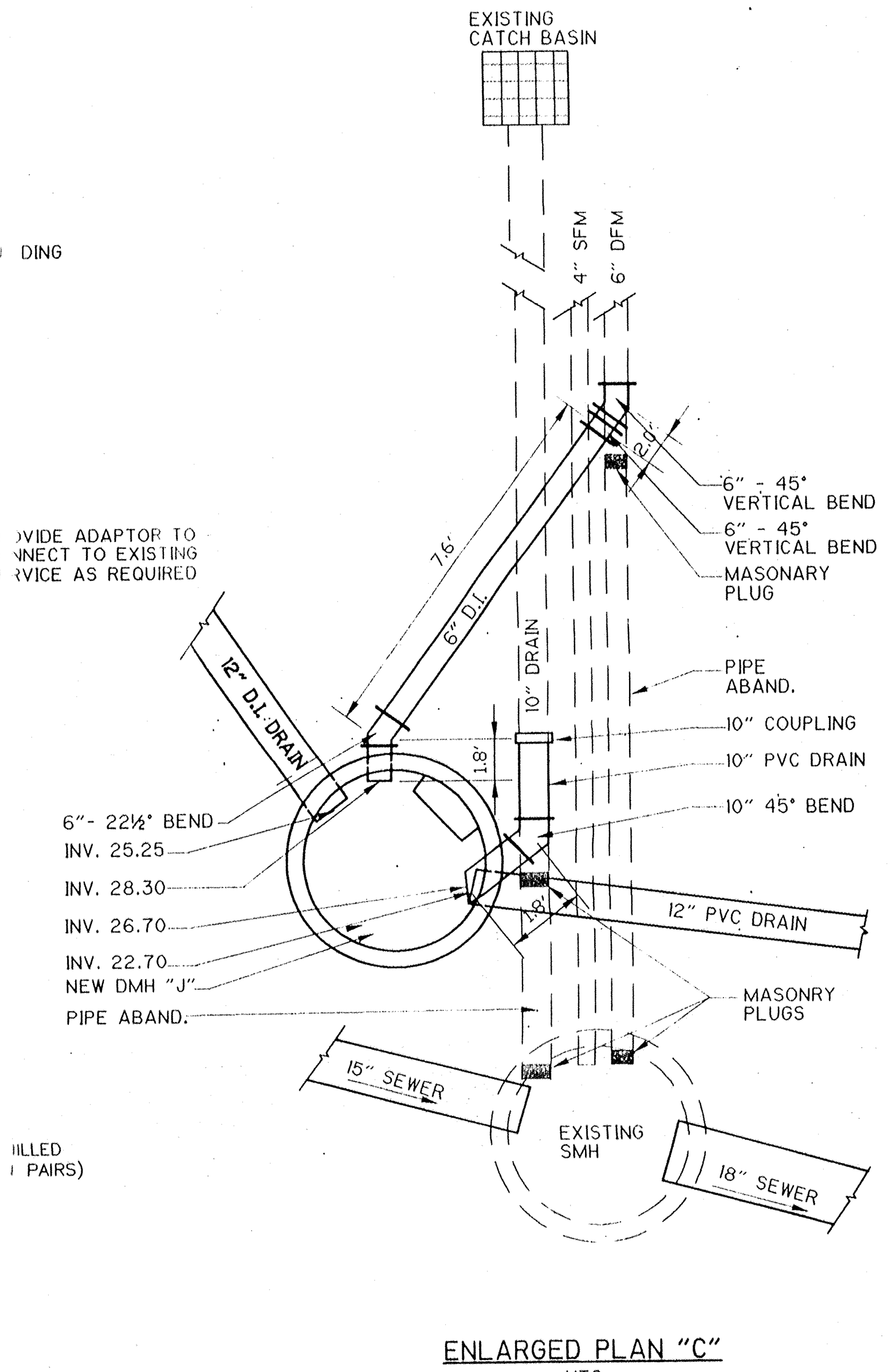
STAKED HAYBALE DETAIL

NTS



DRAIN SERVICE CONNECTION DETAIL

NTS



ENLARGED PLAN "C"

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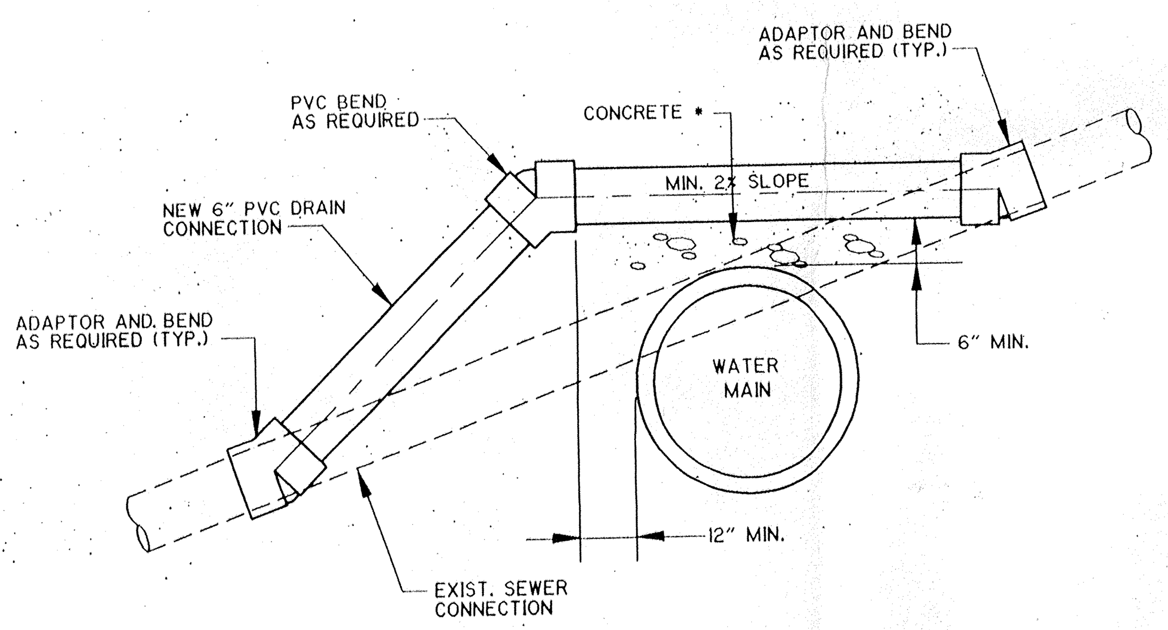
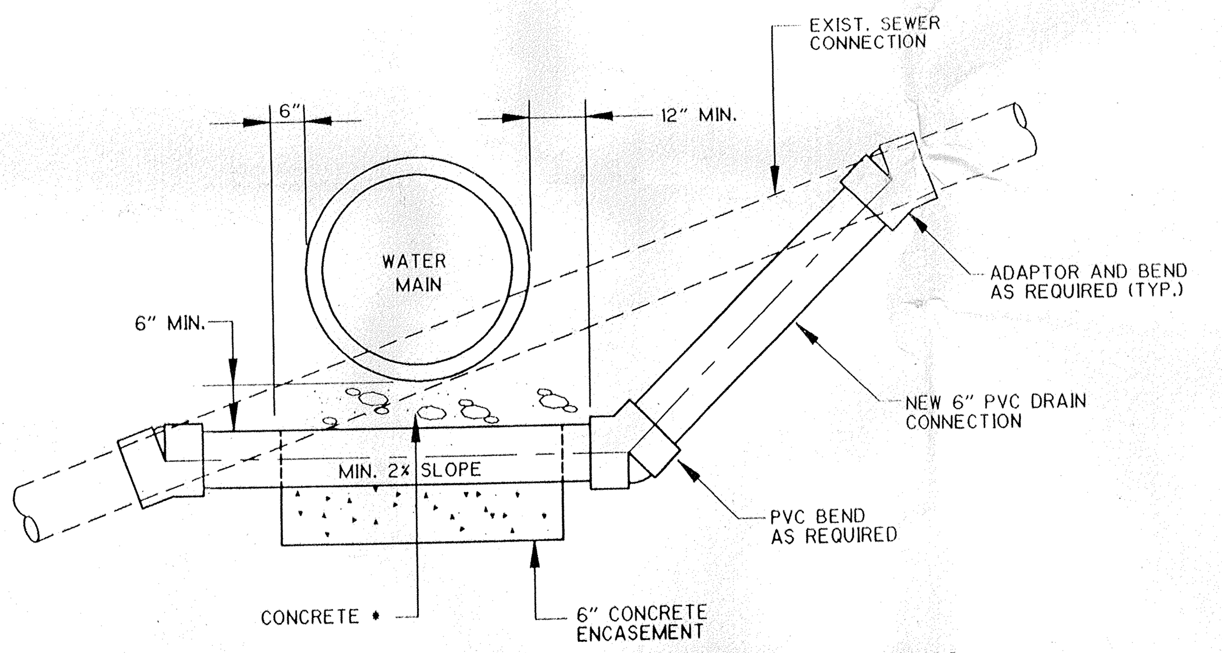


DRAIN RELOCATION ABOVE WATER MAIN

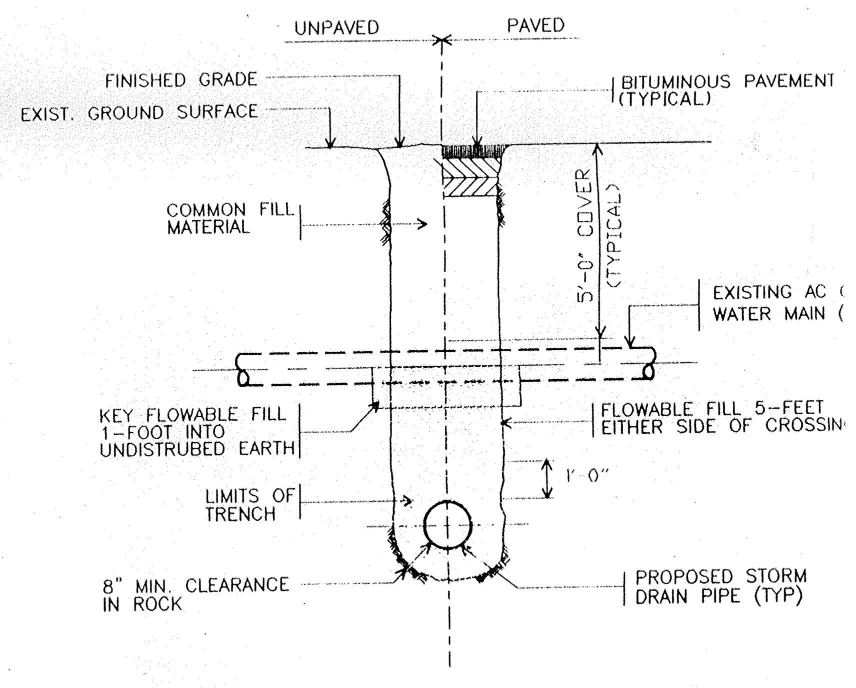
NTS



DRAIN RELOCATION BELOW WATER MAIN

NTS

* CONCRETE ENCASEMENT SHALL BE REQUIRED AROUND SEWER AND WATER MAIN WHERE THE VERTICAL DISTANCE IS LESS THAN 18-IN. ENCASEMENT SHALL EXTEND 10 FEET BEYOND EACH SIDE OF THE CROSSING ALONG THE WATER MAIN.



TYPICAL TRENCH DETAIL FOR CHILLED WATER MAIN CROSSING

NOTE:
1. FLOWABLE FILL TO EXTEND HORIZONTALLY 5-FT BEYOND OUTSIDE OF CHILLED WATER LINE.
2. SIMILAR BACKFILL REQUIREMENTS WILL BE REQUIRED AT STEAM TUNNEL CROSSING.

MATTHEW J. EASTWOOD CIVIL No. 37784 REGISTERED PROFESSIONAL ENGINEER

11-23-98

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ENGINEERING & UTILITIES DEPARTMENT

EMERSON/ROBINSON STORM DRAINS

MISCELLANEOUS DETAILS I

PROJECT NO. 0070-10008
FILE NAME: SEVER_03
SHEET NO. 3

0070-XXXXX

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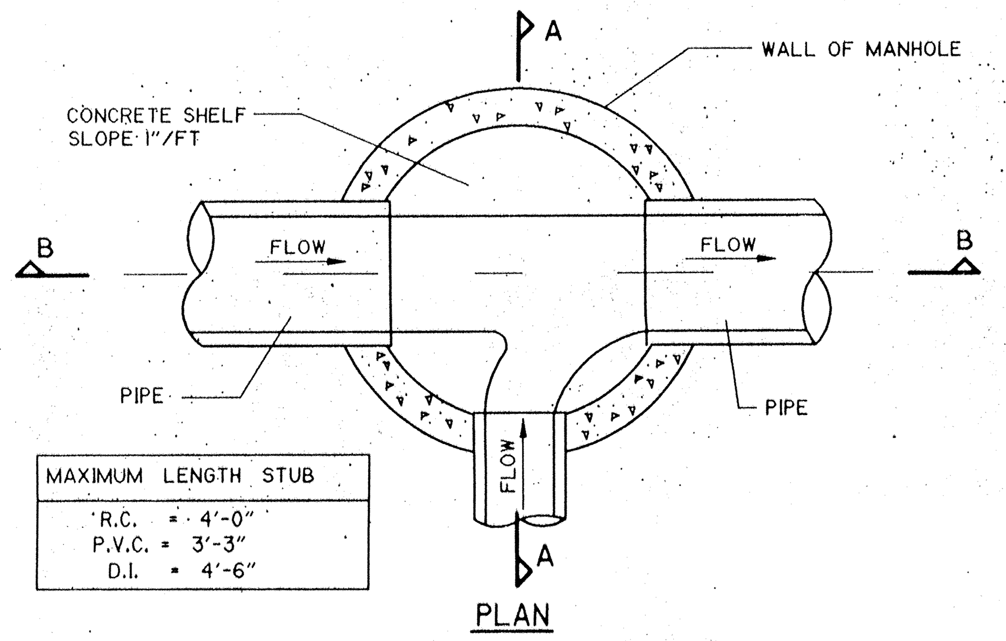
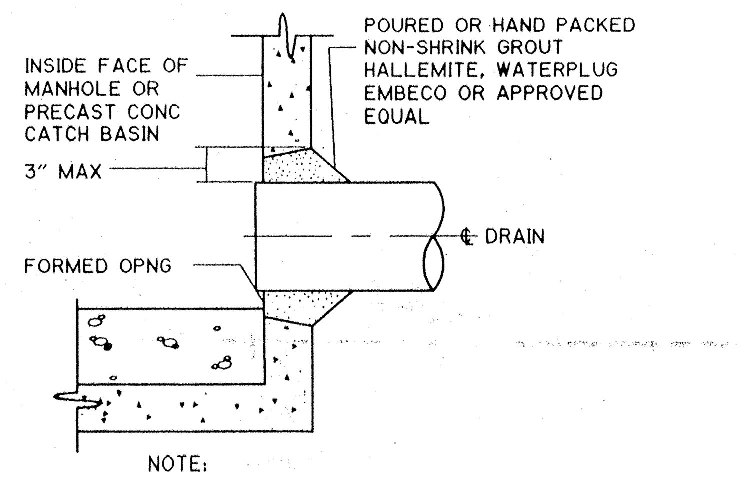


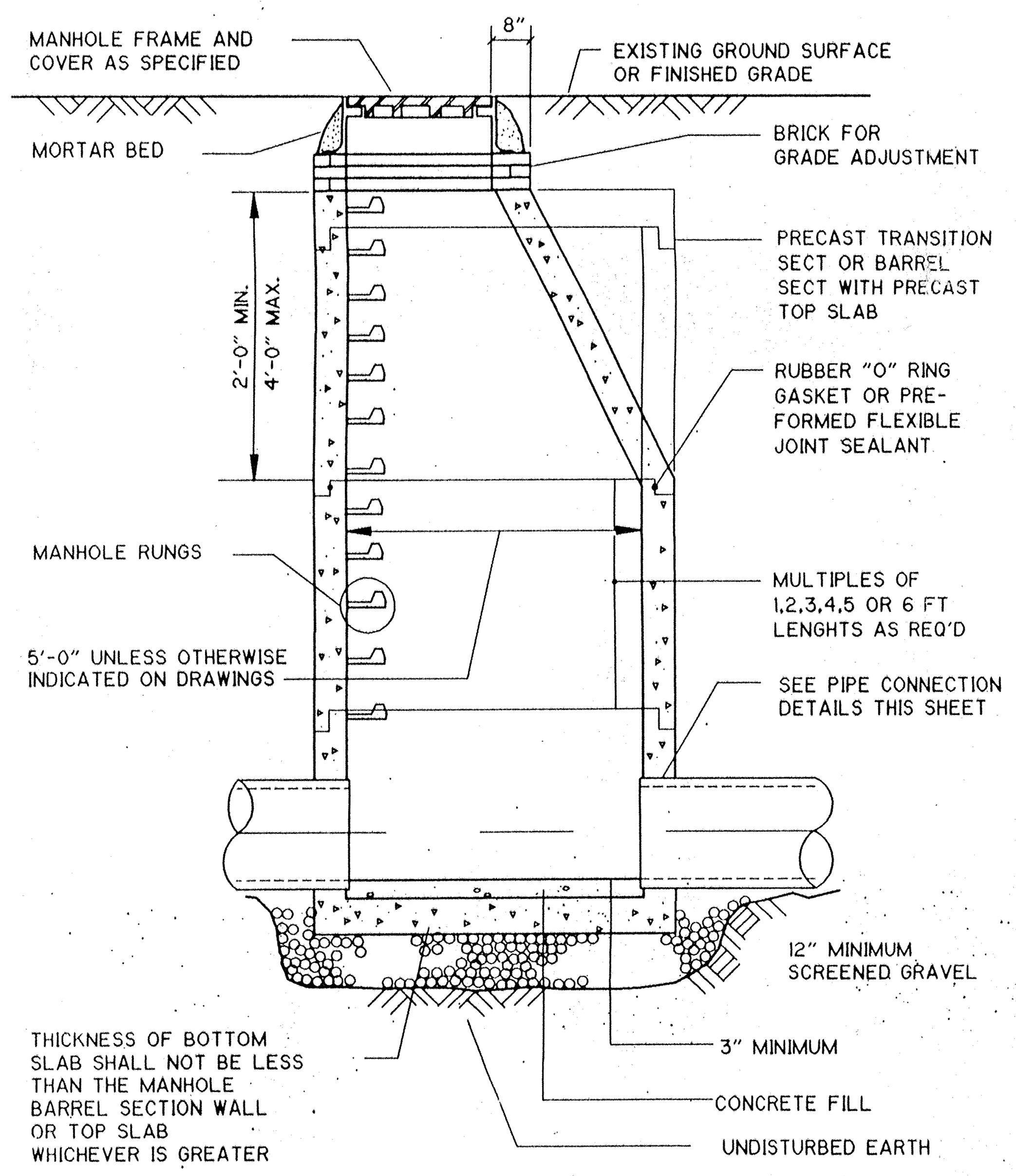
PLAN



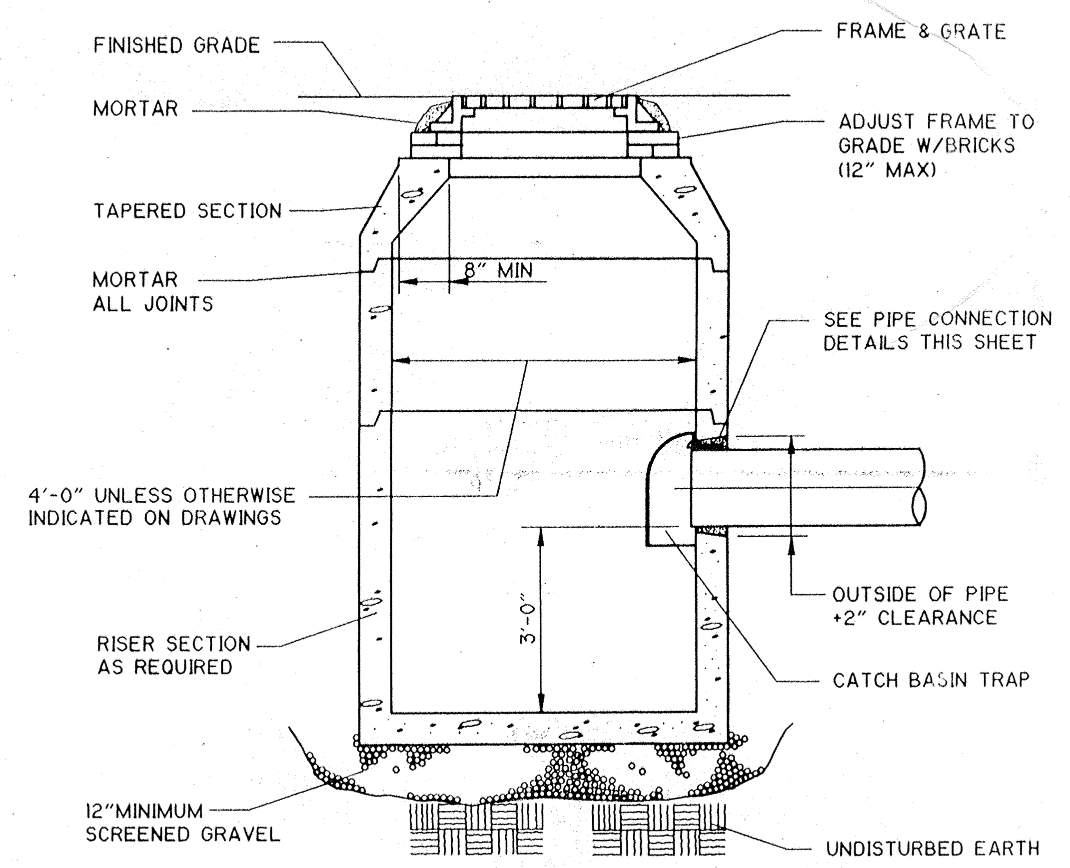
NOTE:
THE CONTRACTOR MAY USE RES-SEAL
OR "KOR-N-SEAL AT HIS OPTION

MH PIPE CONNECTION FOR DRAIN MH AND CATCH BASIN

NTS

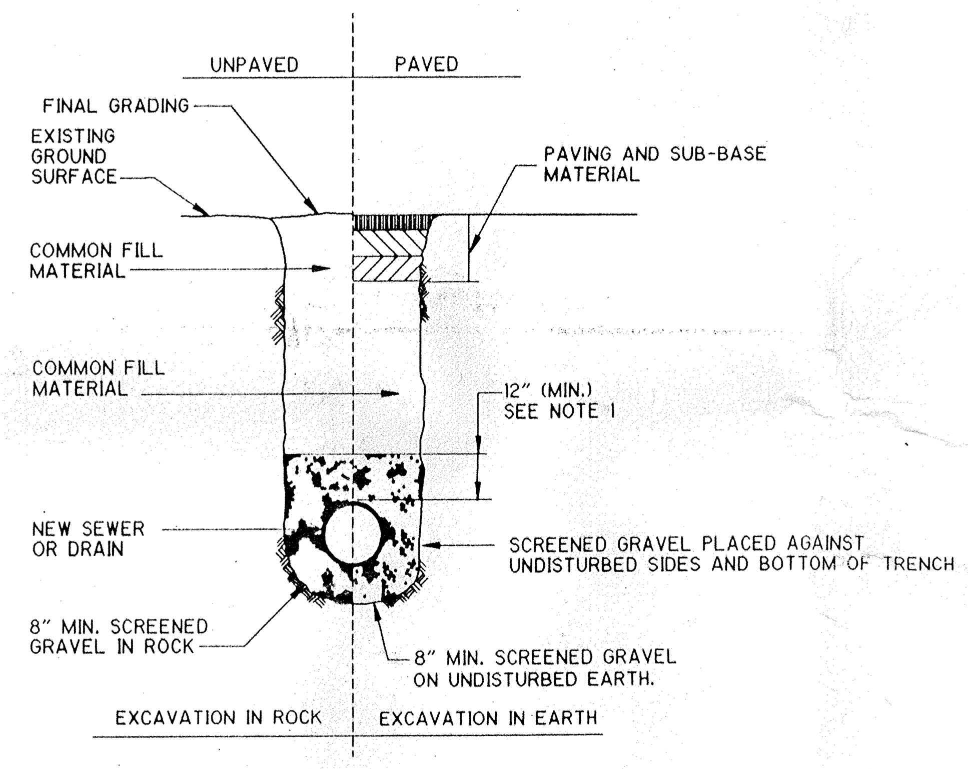


SECTION B-B



PRECAST CATCH BASIN DETAIL

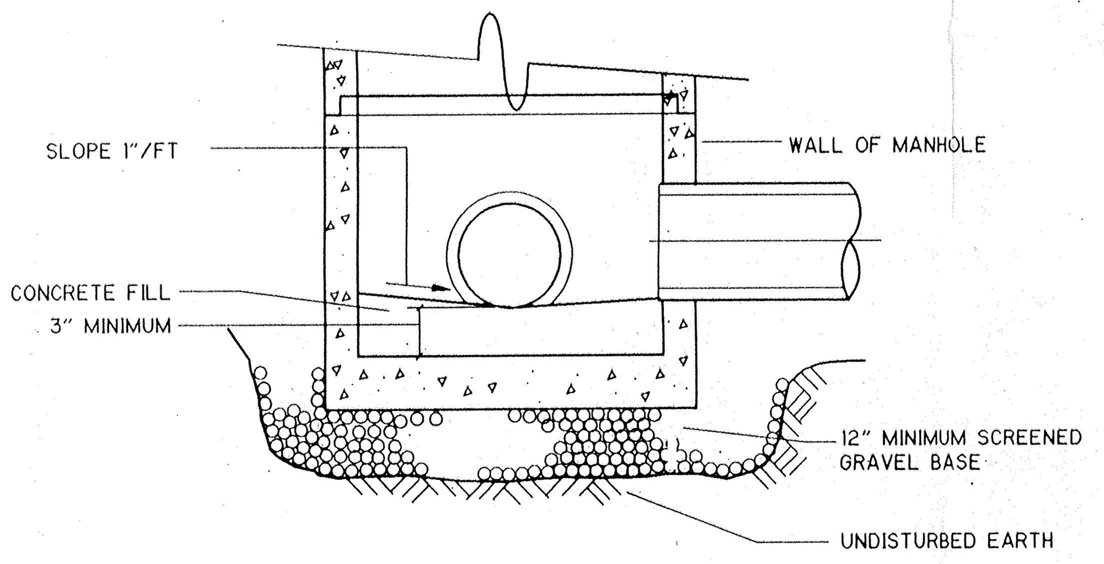
NTS



NOTE:
1. FOR PIPES OTHER THAN PVC, SELECTED COMMON FILL MAY BE USED FROM MID DIAMETER OF PIPE TO 12" ABOVE TOP OF PIPE
2. TRENCHES LOCATED ON THE ROAD SHOULDER SHALL BE TREATED THE SAME AS STREET TRENCHES EXCEPT FOR PAVING.
3. PROVIDE AT LEAST ONE IMPERVIOUS DAM IN GRAVEL BEDDING BETWEEN EACH MANHOLE OR EVERY 300 FT. WHICHEVER IS LESS. SEE DETAIL ON SHEET 3.
4. SHEETING AND BRACING MAY BE EMPLOYED AT THE CONTRACTOR'S OPTION.

TYPICAL TRENCH DETAIL

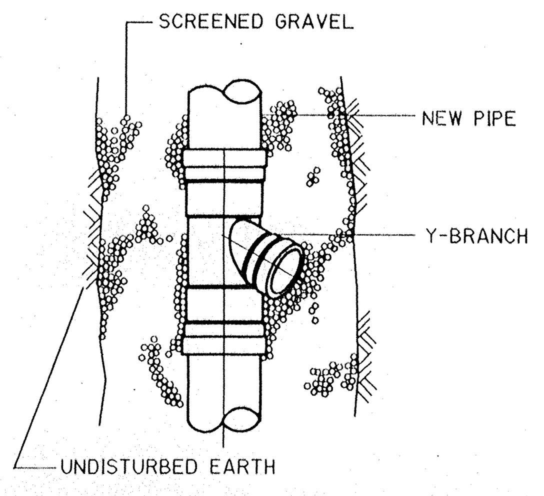
NTS



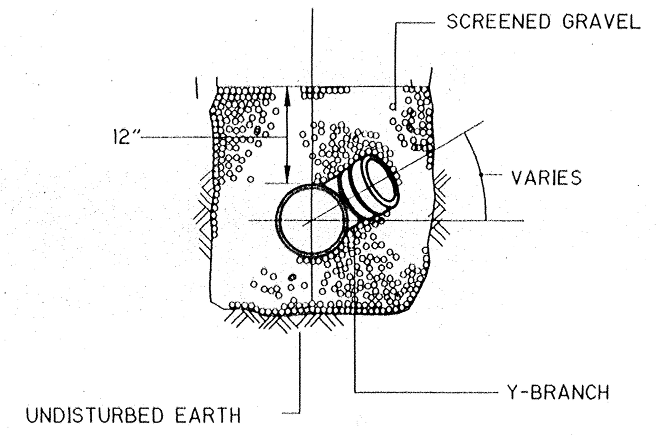
SECTION A-A

PRECAST DRAIN MANHOLE DETAL

NTS



PLAN



SECTION

PVC Y-BRANCH

NTS

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. EASTWOOD
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ENGINEERING & UTILITIES DEPARTMENT

EMERSON/ROBINSON STORM DRAINS

MISCELLANEOUS DETAILS II

PROJECT NO. 0070-10008
FILE NAME: SEVER_04
SHEET NO.
4

11-23-98

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0070-XXXXX

rec'd on Thursday Jan 7, 1999.

Harvard University

ENGINEERING & UTILITIES

FACSIMILE TRANSMITTAL SHEET

TO: Larry Loverme	FROM: Larry Muench - JM
COMPANY: Cambridge DPW	DATE: January 4, 1999
FAX NUMBER: 617-349-4868	TOTAL NO. OF PAGES INCLUDING COVER: 13
PHONE NUMBER: 617-349-4848	SENDER'S REFERENCE NUMBER:
RE: Harvard University Storm Drain Project – Test Number 2	YOUR REFERENCE NUMBER:

☐ FOR YOUR INFORMATION ☒ FOR REVIEW ☒ PLEASE COMMENT ☐ PLEASE REPLY

NOTES/COMMENTS

Larry;

Attached please find the storm drainage test results for the Emerson/Robinson Storm Drainage Project taken 12-03-98.

Test samples were taken at the same three locations as the previous test (Robinson 0+00, Pusey Forced Main, Pusey Sump) and the Fecal Coliform count at all three locations were below the 200-cfu/100ml limit.

The testing agency encountered some difficulty obtaining samples during the first test on 10-14-98 due to the configuration of the sample containers. After discussion with EST, they used different containers for the test on 12-03-98 and easily obtained test samples.

Please call me if you have any questions.

Thank you.

50 CHURCH STREET, 4TH FLOOR, CAMBRIDGE, MA 02138
TEL. 617.496.5090 FAX 617.496.1669

Received: 12/03/98 12/21/98 09:46:38

REPORT TO	HARVARD UNIVERSITY ENG. 50 CHURCH STREET, 4TH FLOOR CAMBRIDGE, MA 02139 617-495-5560	PREPARED BY	TOXIKON CORPORATION 15 WIGGINS AVE BEDFORD, MA 01730
ATTEN	LARRY MUENCH	ATTEN	PAUL LEZBERG
		PHONE	(781)275-3330

CERTIFIED BY

CONTACT JAYSON

CLIENT HARVARD UNIV SAMPLES 6
COMPANY HARVARD UNIVERSITY ENG
FACILITY 50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS. DEMAND. O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID ROBINSON/PUSEY
TAKEN 12/3/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:
CERT#MMA064

SAMPLE IDENTIFICATION

01 ROBINSON 0+00 GRAB
02 ROBINSON 0+00 GRAB
03 PUSEY SUMP GRAB
04 PUSEY SUMP GRAB
05 PUSEY FORCE MAIN GRAB
06 PUSEY FORCE MAIN GRAB

TEST CODES and NAMES used on this workorder

F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLM	TOTAL COLI (MEMBRANE FILT)

Received: 12/03/98 Results by Sample

SAMPLE ID ROBINSON 0+00 GRAB FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 12/03/98 09:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	150

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Received: 12/03/98 Results by Sample

SAMPLE ID ROBINSON 0+00 GRAB FRACTION 01A TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)
Date & Time Collected 12/03/98 09:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	270

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Received: 12/03/98 Results by Sample

SAMPLE ID ROBINSON 0+00 GRAB SAMPLE # 02 FRACTIONS: A
Date & Time Collected 12/03/98 09:00:00 Category WATER

N_AMM	ND
mg/L	DL=0.04

Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY SUMP GRAB FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 12/03/98 09:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY SUMP GRAB FRACTION 03A TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)
Date & Time Collected 12/03/98 09:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	<10

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY SUMP GRAB SAMPLE # 04 FRACTIONS: A
Date & Time Collected 12/03/98 09:45:00 Category WATER

N_AMM	ND
mg/L	DL=0.04

Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN GRAB FRACTION 05A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 12/03/98 09:20:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	140

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN GRAB FRACTION 05A TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)
Date & Time Collected 12/03/98 09:20:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	280

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Received: 12/03/98
Results by Sample

SAMPLE ID PUSEY FORCE MAIN GRAB SAMPLE # 06 FRACTIONS: A
Date & Time Collected 12/03/98 09:20:00 Category WATER

N_AMM	ND
mg/L	DL=0.04

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)

STANDARD METHOD: 9222B

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 17th Edition. 1989. APHA Washington D.C.

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon
(781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ________

Sampling Frequency: ☐ Rush
_____Day Turnaround
☐ Routine

WORK ORDER #: 98.12.060
DUE DATE: 12.17.98

Client: Harvard University Engineering & Utilities
Address: 50 Church Street, 4th Floor
Cambridge MA 02139-

Contact Name: Larry Muench
Phone Number: (617) 495-5560
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
obinson 0+00 Grab (1)	1	~~125~~ 250 ml	B	~~1~~ 2	12/3	0900	None	Total Coliform, Fecal Coliform	pH= 7.42
obinson 0+00 Grab (2)	1	1 L	P	1	12/3	0900	H2SO4	NH3	Temp= 15.1°C
usey Sump Grab (3)	1	~~125~~ 250 ml	B	~~1~~ 2	12/3	~~0920~~ 0945	None	Total Coliform, Fecal Coliform	pH= 7.59
usey Sump Grab (4)	1	1 L	P	1	12/3	~~0920~~ 0945	H2SO4	NH3	Temp= 17.7°C
usey Force Main Grab (5)	1	~~125~~ 250 ml	B	~~1~~ 2	12/3	~~0945~~ 0920	None	Total Coliform, Fecal Coliform	pH= 7.49
usey Force Main Grab (6)	1	1 L	P	1	12/3	~~0945~~ 0920	H2SO4	NH3	Temp= 20.1

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[illegible]	12/3/98	1200	1	[illegible]	[illegible]	12-3-98	12:45
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

COOLER TEMP= 3.8C

* All samples chilled to 4 degrees Celsius.

ENGINEERING & UTILITIES

FACSIMILE TRANSMITTAL SHEET

TO: Larry Loverne	FROM: Larry Muench
COMPANY: Cambridge DPW	DATE: January 4, 1999
FAX NUMBER: 617-349-4868	TOTAL NO. OF PAGES INCLUDING COVER: 13
PHONE NUMBER: 617-349-4848	SENDER'S REFERENCE NUMBER:
RE: Harvard University Storm Drain Project – Test Number 2	YOUR REFERENCE NUMBER:

☐ FOR YOUR INFORMATION ☒ FOR REVIEW ☒ PLEASE COMMENT ☐ PLEASE REPLY

NOTES/COMMENTS

Larry,

Attached please find the storm drainage test results for the Emerson/Robinson Storm Drainage Project taken 12-03-98.

Test samples were taken at the same three locations as the previous test (Robinson 0+00, Pusey Forced Main, Pusey Sump) and the Fecal Coliform count at all three locations were below the 200-cfu/100ml limit.

The testing agency encountered some difficulty obtaining samples during the first test on 10-14-98 due to the configuration of the sample containers. After discussion with EST, they used different containers for the test on 12-03-98 and easily obtained test samples.

Please call me if you have any questions.

Thank you.

50 CHURCH STREET, 4TH FLOOR, CAMBRIDGE, MA 02138
TEL. 617.496.5090 FAX 617.496.1669

Page 1 TOXIKON CORP. REPORT Work Order # 98-12-060
Received: 12/03/98 12/21/98 09:46:38

REPORT TO: HARVARD UNIVERSITY ENG.
50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139
617-495-5560
ATTEN LARRY MUENCH

PREPARED BY: TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730
ATTEN PAUL LEZBERG
PHONE (781)275-3330

CERTIFIED BY
CONTACT JAYSON

CLIENT HARVARD UNIV SAMPLES 6
COMPANY HARVARD UNIVERSITY ENG
FACILITY 50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139

MA CERT # M-MA064: TRACE METALS, SULFATE, CYANIDE, RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST., NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID ROBINSON/PUSEY
TAKEN 12/3/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:
CERT#MMA064

SAMPLE IDENTIFICATION

01 ROBINSON 0+00 GRAB
02 ROBINSON 0+00 GRAB
03 PUSEY SUMP GRAB
04 PUSEY SUMP GRAB
05 PUSEY FORCE MAIN GRAB
06 PUSEY FORCE MAIN GRAB

TEST CODES and NAMES used on this workorder

F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLM	TOTAL COLI (MEMBRANE FILT)

Page 2 TOXIKON CORP. REPORT Work Order # 98-12-060
Received: 12/03/98 Results by Sample

SAMPLE ID ROBINSON 0+00 GRAB FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 12/03/98 09:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	150

Notes and definitions for this report:
TEST DATE: 12/03/98
UNITS = cfu / 100ml

Received: 12/03/98 Results by Sample

SAMPLE ID ROBINSON 0+00 GRAB FRACTION 01A TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)
Date & Time Collected 12/03/98 09:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	270

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

SAMPLE ID ROBINSON 0+00 GRAB SAMPLE # 02 FRACTIONS: A
Date & Time Collected 12/03/98 09:00:00 Category WATER

N_AMM	ND
mg/L	DL=0.04

Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY SUMP GRAB FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 12/03/98 09:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

Page 6 TOXIKON CORP. REPORT Work Order # 98-12-060
Received: 12/03/98 Results by Sample

SAMPLE ID PUSEY SUMP GRAB FRACTION 03A TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)
Date & Time Collected 12/03/98 09:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	<10

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

SAMPLE ID PUSEY SUMP GRAB	SAMPLE # 04 FRACTIONS: A
	Date & Time Collected 12/03/98 09:45:00 Category WATER
N_AMM ND	
mg/L DL=0.04	

SAMPLE ID PUSEY FORCE MAIN GRAB FRACTION 05A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 12/03/98 09:20:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	140

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

SAMPLE ID PUSEY FORCE MAIN GRAB FRACTION 05A TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)
Date & Time Collected 12/03/98 09:20:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	280

Notes and definitions for this report:

TEST DATE: 12/03/98

UNITS = cfu / 100ml

SAMPLE ID PUSEY FORCE MAIN GRAB SAMPLE # 06 FRACTIONS: A
Date & Time Collected 12/03/98 09:20:00 Category WATER

N_AMM	ND
mg/L DL=0.04	

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLM NAME TOTAL COLI (MEMBRANE FILT)

STANDARD METHOD: 9222B

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 17th Edition. 1989. APHA Washington D.C.

98-12-060

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: ☐ Rush ____ Day Turnaround ☐ Routine

WORK ORDER #: 98.12.060
DUE DATE: 12.17.98

ient: Harvard University Engineering & Utilities
ldress: 50 Church Street, 4th Floor
Cambridge MA 02139-

Contact Name: Larry Muench
Phone Number: (617) 495-5560
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative	Analysis	Comments
›binson 0+00 Grab (1)	1	~~125~~ 250 ml	B	~~2~~	12/3	0900	None	Total Coliform, Fecal Coliform	pH= 7.42
›binson 0+00 Grab (2)	1	1 L	P	1	12/3	0900	H2SO4	NH3	Temp= 15.1°C
ısey Sump Grab (3)	1	~~125~~ 250 ml	B	~~2~~	12/3	~~0930~~ 0945	None	Total Coliform, Fecal Coliform	pH= 7.59
ısey Sump Grab (4)	1	1 L	P	1	12/3	~~0930~~ 0945	H2SO4	NH3	Temp= 17.7°C
ısey Force Main Grab (5)	1	~~125~~ 250 ml	B	~~2~~	12/3	~~0945~~ 0920	None	Total Coliform, Fecal Coliform	pH= 7.49
ısey Force Main Grab (6)	1	1 L	P	1	12/3	~~0945~~ 0920	H2SO4	NH3	Temp= 20.1

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	12/3/98	1200	1	[signature]	[signature]	12-7-98	12:45
			2				
			3				
			4				
			5				

ldditional Comments:
te Contact: Jim Smith, Cell: (617) 839-1638

COOLER TEMP = 3.8C

* All samples chilled to 4 degrees Celsius.

Test #2 Results

Transmittal Form

Larry Muench gave this to L LoVerme through Jim Smith of McCabe on Friday Aug 21, 1998

Joseph P. McCabe, Inc.
509 East First Street
So. Boston, MA 02127
617-268-2030

Date: 8-15-98
Company: Harvard Univ.
Attention: Larry Meutch
From: Jim Smith
Project name: Emerson/Robinson Drainage

Regarding:

We are sending you:

	Copies	Date	Description
☐ As requested			
■ Attached	1	8-14-98	Toxikon Test Results –
☐ Under separate cover			

For your:

- ■ Records
- ■ Use and information
- ☐ Approval
- ☐ Review and comment
- ☐ Use and distribution

Memo:

Via:

- ☐ Overnight mail
- ☐ Mail
- ■ Hand delivered
- ☐ Fax

Remarks:

Telefax number:

Number of pages (including this page): 13

Copies to: File

Thanks – Jim Smith

TOX # 98-08-189
DUE DATE: 08-13-98

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Chain of Custody Record

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ________

Laboratory: Toxikon (781) 275-3330

Sampling Frequency: ☒ Rush 2 Day Turnaround ☐ Routine

rush - 2 day turn

Client: Joseph P. McCabe, Inc.
Address: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	Container #	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
Robinson Collector Grab	1	125 ml	B	2	8/11	1400	None	Total Coliform, Fecal Coliform	
Robinson Collector Grab	1	1L [illegible]	P	1	"	"	H2SO4	NH3	pH= 8.34
									Temp= 21.5°C
Manhole L Grab	1	125	B	2	"	1425	None	Total Coliform, Fecal Coliform	
Manhole L Grab	1	500	P	1	"	"	H_2SO_4	NH_3	pH= 9.18
									Temp= 22.7°C
Canaday Sample	4	125	B	2	"	1435	None	Total Coliform, Fecal Coliform	
Canaday Sample	4	500	P	1	"	"	H_2SO_4	NH_3	pH= 8.80
									Temp= 21.1°C

SAMPLER'S SIGNATURE	DATE	TIME
[signature]	8/11/98	1500

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	[signature]	[signature]	8/11/98	16:15
2				
3				
4				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater. APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

Received: 08/11/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-189

SAMPLE ID CANADAY SAMPLE

SAMPLE # 06 FRACTIONS: A

Date & Time Collected 08/11/98 14:35:00 Category WATER

N_AMM 0.516
mg/L DL=0.04

Received: 08/11/98

TOXIKON CORP.

REPORT

Results by Sample

Work Order # 98-08-189

SAMPLE ID CANADAY SAMPLE

FRACTION 05A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 08/11/98 14:35:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	<1

Notes and definitions for this report:

TEST DATE: 08/11/98

UNITS = cfu / 100ml

Received: 08/11/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-189

SAMPLE ID CANADAY SAMPLE

FRACTION 05A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/11/98 14:35:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM....................	<10

Notes and definitions for this report:
TEST DATE: 08/11/98
UNITS = cfu / 100ml

Page 7
Received: 08/11/98

TOXIKON CORP. REPORT Work Order # 98-08-189
Results by Sample

SAMPLE ID MANHOLE L GRAB SAMPLE # 04 FRACTIONS: A
Date & Time Collected 08/11/98 14:25:00 Category WATER

N_AMM 0.966
mg/L DL=0.04

Received: 08/11/98 TOXIKON CORP. REPORT Work Order # 98-08-189

Results by Sample

SAMPLE ID MANHOLE L GRAB

FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 08/11/98 14:25:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	170

Notes and definitions for this report:

TEST DATE: 08/11/98

UNITS = cfu / 100ml

Page 5
Received: 08/11/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-189

SAMPLE ID MANHOLE L GRAB

FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/11/98 14:25:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:
TEST DATE: 08/11/98
UNITS = cfu / 100ml

Received: 08/11/98 TOXIKON CORP. REPORT Work Order # 98-08-189

Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB SAMPLE # 02 FRACTIONS: A

Date & Time Collected 08/11/98 14:00:00 Category WATER

N_AMM 1.06

mg/L DL=0.04

Received: 08/11/98

TOXIKON CORP. REPORT Work Order # 98-08-189
Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/11/98 14:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	9000

Notes and definitions for this report:

TEST DATE: 08/11/98

UNITS = cfu / 100ml

Received: 08/11/98

TOXIKON CORP. REPORT Work Order # 98-08-189

Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM

Date & Time Collected 08/11/98 14:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	1150

Notes and definitions for this report:

TEST DATE: 08/11/98

UNITS = cfu / 100ml

Page 1
Received: 08/11/98

TOXIKON CORP. REPORT 08/14/98 14:33:19

Work Order # 98-08-189

REPORT TO: JOSEPH P. McCABE, INC
509 EAST FIRST STREET
SOUTH BOSTON, MA 02127
617-268-2030
ATTEN: ANDREW McCABE

PREPARED BY: TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

CERTIFIED BY

ATTEN: PAUL LEZBERG
PHONE: (617)275-3330

CONTACT: JOHNM

CLIENT: MCCABE
SAMPLES: 6
COMPANY: JOSEPH P. McCABE, INC
FACILITY: 509 EAST FIRST STREET
SOUTH BOSTON, MA 02127

MA CERT # M-MA064: TRACE METALS, SULFATE, CYANIDE, RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST, NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs, CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID: HARVARD UNIVERSITY
TAKEN: 8/11/98
TRANS:
TYPE: WATER
P.O. #:
INVOICE: under seperate cover

VERIFIED BY:

SAMPLE IDENTIFICATION

01 ROBINSON COLLECTOR GRAB
02 ROBINSON COLLECTOR GRAB
03 MANHOLE L GRAB
04 MANHOLE L GRAB
05 CANADAY SAMPLE
06 CANADAY SAMPLE

TEST CODES and NAMES used on this workorder

Code	Name
F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

rec'd from Jim Smith and Larry Muench on Tues Aug 25, 19

Test #3 result

Transmittal Form

Joseph P. McCabe, Inc.
509 East First Street
So. Boston, MA 02127
617-268-2030

Date: 8-25-98

Company: Harvard Univ.

Attention: Larry Meutch

From: Jim Smith

Project name: Emerson/Robinson Drainage

Regarding: Water Testing

We are sending you:

- ☐ As requested
- ■ Attached
- ☐ Under separate cover

Copies	Date	Description
1	8-24-98	Test Results

For your:

- ■ Records
- ■ Use and information
- ☐ Approval
- ☐ Review and comment
- ☐ Use and distribution

Memo:

Via:

- ☐ Overnight mail
- ☐ Mail
- ■ Hand delivered
- ☐ Fax

Remarks:

Telefax number:

Number of pages (including this page):

Copies to: File – Larry LaVerme

Thanks – Jim Smith

TOXIKON

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FACSIMILE INSTRUCTION SHEET

Date: 8/24

Name: Andrew McCabe

Company:

Fax #:

From: Kim C.

Total No. of Pages Including Cover Sheet: 7

If you do not receive all of the pages, please call (617) 275-3330.
Thank you. Notes:

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15 Wiggins Avenue • Bedford, Massachusetts 01730
(781) 275-3330

Received: 08/18/98 TOXIKON CORP. REPORT 08/21/98 09:55:12 Work Order # 98-08-331

REPORT TO JOSEPH P. McCABE, INC
509 EAST FIRST STREET
SOUTH BOSTON, MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED BY TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY [signature]

CONTACT JOHNM

CLIENT MCCABE SAMPLES 2
COMPANY JOSEPH P. McCABE, INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON, MA 02127

MA CERT # M-MA064; TRACE METALS, SULFATE, CYANIDE, RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST., NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIVERSITY CONSTRUCT
TAKEN 8/18/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY: [signature]

SAMPLE IDENTIFICATION

01 ROBINSON COLLECTOR GRAB 1
02 ROBINSON COLLECTOR GRAB 2

TEST CODES and NAMES used on this workorder

F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

Received: 08/18/98 TOXIKON CORP. REPORT Work Order # 98-08-331

Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB 1 FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM

Date & Time Collected 08/18/98 08:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	2510

Notes and definitions for this report:

TEST DATE: 08/18/98

UNITS = cfu / 100ml

Received: 08/18/98 TOXIKON CORP. REPORT Work Order # 98-08-331

Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB 1 FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 08/18/98 08:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	112000

Notes and definitions for this report:

TEST DATE: 08/18/98

UNITS = cfu / 100ml

TOXIKON CORP. REPORT

Received: 08/18/98 Results by Sample Work Order # 98-08-331

SAMPLE ID ROBINSON COLLECTOR GRAB 2 SAMPLE # 02 FRACTIONS: A

Date & Time Collected 08/18/98 08:00:00 Category WATER

N_AMM	ND
mg/L	DL=0.04

98-08-331

EST
ENVIRONMENTAL SAMPLING TECHNOLOGY

Chain of Custody Record

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: ☐ Rush ____ Day Turnaround ☒ Routine

WORK ORDER #: 98.08.331
DUE DATE : 08.31.98

ent: Joseph P. McCabe, Inc.
dress: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container			Sampling		Preservative *	Analysis	Comments
		Size	Type	#	Date	Time			
inson Collector Grab (1)	1	125 ml	B	2	8/18	800	None	Total Coliform, Fecal Coliform	pH= 7.45
inson Collector Grab (2)	1	1 L	P	1	"	"	H2SO4	NH3	Temp=24.7°C

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	8/18/98	810	1	[signature]	[signature]/LAB	8/18/98	12:40
			2				
			3				
			4				
			5				

itional Comments:
Contact: Jim Smith, Cell: (617) 839-1638

* All samples chilled to 4 degrees Celsius.

PHONE NO. : 6172711135 Aug. 24 1998 10:02AM

rec'd ~~Thursday~~
Aug 22, 1998
from Larry Meu
and Jim Smith
Test Results # 4

Transmittal Form

Joseph P. McCabe, Inc.
509 East First Street
So. Boston, MA 02127
617-268-2030

Date: 8-27-98
Company: Harvard University
Attention: Larry Meutch
From: Jim Smith
Project name: Emerson/Robinson Drainage

Regarding: Storm Water Testing --- Test of 8-24-98

We are sending you:

- ☐ As requested
- ■ Attached
- ☐ Under separate cover

Copies	Date	Description

For your:

- ☐ Records
- ■ Use and information
- ☐ Approval
- ☐ Review and comment
- ☐ Use and distribution

Memo:

Via:

- ☐ Overnight mail
- ☐ Mail
- ■ Hand delivered
- ☐ Fax

Remarks:

Telefax number:

Number of pages (including this page):

Copies to: File – Larry LeVerme

Thanks – Jim Smith

Received: 08/24/98

TOXIKON CORP. REPORT 08/26/98 12:29:22

Work Order # 98-08-460

REPORT TO JOSEPH P. McCABE,INC
509 EAST FIRST STREET
SOUTH BOSTON,MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED BY TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY

CONTACT JOHNM

CLIENT MCCABE SAMPLES 4
COMPANY JOSEPH P. McCABE,INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON,MA 02127

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs , CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIVERSITY CONST.
TAKEN 8/24/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:

SAMPLE IDENTIFICATION

01 ROBINSON 0+00 1
02 ROBINSON 0+00 2
03 PUSEY FORCE MAIN 3
04 PUSEY FORCE MAIN 4

TEST CODES and NAMES used on this workorder

F COLI FECAL COLIFORM
N AMM NITROGEN AMMONIA
T COLI TOTAL COLI (COLILERT)

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460
Results by Sample

SAMPLE ID ROBINSON 0+00 1 FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/24/98 10:30:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	120

Notes and definitions for this report:
TEST DATE: 08/24/98
UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460
Results by Sample

SAMPLE ID ROBINSON 0+00 1 FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/24/98 10:30:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	11200

Notes and definitions for this report:
TEST DATE: 08/24/98
UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460

Results by Sample

SAMPLE ID ROBINSON 0+00 2 SAMPLE # 02 FRACTIONS: A

Date & Time Collected 08/24/98 10:30:00 Category WATER

N_AMM 0.621

g/L DL=0.04

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460
Results by Sample

SAMPLE ID PUSEY FORCE MAIN 3 FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/24/98 10:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	890

Notes and definitions for this report:
TEST DATE: 08/24/98
UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460
Results by Sample

SAMPLE ID PUSEY FORCE MAIN 3 FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/24/98 10:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	27800

Notes and definitions for this report:
TEST DATE: 08/24/98
UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460

Results by Sample

SAMPLE ID PUSEY FORCE MAIN 4 SAMPLE # 04 FRACTIONS: A

Date & Time Collected 08/24/98 10:45:00 Category WATER

N_AMM 0.208
mg/L DL=0.04

TOXIKON CORP. REPORT

Received: 08/24/98 Test Methodology Work Order # 98-08-460

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater. APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

98-08-460

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: ☒ Rush 2 Day Turnaround ☐ Routine

WORK ORDER #: 98.08.460
DUE DATE: 08.26.98

Client: Joseph P. McCabe, Inc.
Address: 509 East First Street, South Boston, MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	Container #	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
ROBINSON Ø+ØØ ①	1	125 ml	B	2	8/24/98	1030	None	Total Coliform, Fecal Coliform	
ROBINSON Ø+ØØ ②	1	1 L	P	1	"	"	H2SO4	NH3	pH= 7.10
&									Temp= 18.8°C
POSEY FORCEMAN ③	1	125 ml	B	2	8/24/98	1045	None	Total Coliform, Fecal Coliform	
POSEY FORCEMAN ④	1	1 L	P	1	"	"	H2SO4	NH3	pH= 7.10
									Temp= 17.5°C

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	8/24/98	1100	1	[signature]	[signature]	8-24-98	13:25
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

* All samples chilled to 4 degrees Celsius.

PHONE NO. : 6172711135 Aug. 26 1998 03:21PM

rec'd from Larry Muench on Sept 2, 1998

Test Results #5

TOXIKON

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FACSIMILE INSTRUCTION SHEET

Date: 8/1/98

Name: Andrew McCabe

Company: Joseph D. McCabe

Fax #:

From: Kevin Correira

Total No. of Pages Including Cover Sheet: 16

If you do not receive all of the pages, please call (617) 275-3330.
Thank you. Notes:

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15 Wiggins Avenue • Bedford, Massachusetts 01730
(781) 275-3330

98-08-577

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Chain of Custody Record

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: ☐ Rush ____Day Turnaround ☐ Routine

Client: Joseph P. McCabe, Inc.
Address: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

WORK ORDER #: 98-08-577
DUE DATE: 09-11-98

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
1 Pusey Sump	1	125 ml	B	2	8/28	1130	None	Total Coliform, Fecal Coliform	pH= 7.29
2 " "	1	1 L	P	1	"	"	H2SO4	NH3	Temp= 68°F
3 Pusey Force Main	1	125 ml	B	2	8/28	1140	None	Total Coliform, Fecal Coliform	pH= 7.37
4	1	1 L	P	1	"	"	H2SO4	NH3	Temp= 69°F
5 Robinson 0700	1	125ml	B	2	8/28	1200	None	T. Col., Fecal Col.	pH= 7.61
6 "	1	1L	P	1	"	"	H_2SO_4	NH_3	Temp= 67°F
7 Canady	1	125ml	B	2	8/28	1210	None	T. Col, Fecal Col	pH= 8.9 9.2
8 "	1	1L	P	1	"	"	H_2SO_4	NH_3	Temp= 65°F

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	8/28/98	1300	1	[signature]	[signature]	8-28	13:15
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1636

* All samples chilled to 4 degrees Celsius.

Page 1
Received: 08/28/98

TOXIKON CORP.
REPORT
09/01/98 09:06:09

Work Order # 98-08-577

REPORT TO: JOSEPH P. McCABE INC
509 EAST FIRST STREET
SOUTH BOSTON, MA 02127
617-268-2030
ATTEN: ANDREW McCABE

PREPARED BY: TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

CERTIFIED BY

ATTEN: PAUL LEZBERG
PHONE: (617)275-3330

CONTACT: JOHNM

CLIENT: MCCABE
SAMPLES: 8
COMPANY: JOSEPH P. McCABE, INC
FACILITY: 509 EAST FIRST STREET
SOUTH BOSTON, MA 02127

MA CERT # M-MA066; TRACE METALS, SULFATE, CYANIDE, RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, HW, THMs, VOC, PEST., NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs , CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID: HARVARD UNIVERSITY CONSTRUC
TAKEN: 8/28/98
TRANS:
TYPE: WATER
P.O. #:
INVOICE: under separate cover

VERIFIED BY:

SAMPLE IDENTIFICATION

01 PUSEY SUMP
02 PUSEY SUMP
03 PUSEY FORCE MAIN
04 PUSEY FORCE MAIN
05 ROBINSON 0+00
06 ROBINSON 0+00
07 CANADY
08 CANADY

TEST CODES and NAMES used on this workorder

F COLI FECAL COLIFORM
N AMM NITROGEN AMMONIA
T COLI TOTAL COLI (COLILERT)

Page 2
Received: 08/28/98

TUKIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID PUSEY SUMP

FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/28/98 11:30:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	90

Notes and definitions for this report:

TEST DATE: 08/28/98
UNITS = cfu / 100ml

Received: 08/28/98

TOXIKON CORP.

REPORT

Results by Sample

Work Order # 98-08-577

SAMPLE ID PUSEY SUMP

FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 08/28/98 11:30:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	54000

Notes and definitions for this report:

TEST DATE: 08/28/98

UNITS = cfu / 100ml

TOXIKON CORP. REPORT

Received: 08/28/98

Results by Sample

Work Order # 98-08-577

SAMPLE ID PUSEY SUMP

SAMPLE # 02 FRACTIONS: A

Date & Time Collected 08/28/98 11:30:00 Category WATER

N_AMM	ND
mg/L DL=0.06	

Page 5
Received: 08/28/98

TOXIKON COMP.
REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID PUSEY FORCE MAIN

FRACTION 03A TEST CODE E COLI NAME FECAL COLIFORM
Date & Time Collected 08/28/98 11:40:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	1530

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Page 6 TOXIKON CORP. REPORT Work Order # 98-08-577
Received: 08/28/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/28/98 11:40:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	16000

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Page 7

Received: 08/28/98 TOKIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID PUSEY FORCE MAIN SAMPLE # 06 FRACTIONS: A

Date & Time Collected 08/28/98 11:40:00 Category WATER

N_AMM ND

mg/L DL=0.06

Received: 08/28/98 TOXIKON CORP. REPORT Work Order # 98-08-577
Results by Sample

SAMPLE ID ROBINSON 0+00 FRACTION 05A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/28/98 12:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM....................	420

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Page 9
Received: 08/28/98

TOXIKON CORP.
REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID MORRISON 0+00
FRACTION 05A TEST CODE T COLI NAME TOTAL COLI (SPLILERT)
Date & Time Collected 08/28/98 12:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM....................	61000

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Received: 08/28/98 TOXIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID [illegible] 0+00 SAMPLE # 06 FRACTIONS: A

Date & Time Collected 08/28/98 12:00:00 Category WATER

[illegible] ND

[illegible] DL=0.06

Received: 08/28/98

TOXIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID CAMAOT FRACTION 07A TEST CODE F COLI NAME FECAL COLIFORM

Date & Time Collected 08/28/98 12:10:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:

TEST DATE: 08/28/98

UNITS = cfu / 100ml

Page 12
Received: 08/28/98

TOKIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID CARADT FRACTION 07A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/28/98 12:10:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	80

Notes and definitions for this report:

TEST DATE: 08/28/98

UNITS = cfu / 100ml

Received: 08/28/98

TOXIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID CANADY SAMPLE # 08 FRACTIONS: A

Date & Time Collected 08/28/98 12:10:00 Category WATER

N_AMM 0.068
mg/L DL=0.04

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater. APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMB NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

extra

rec'd Thursday
Aug 27, 1998
from Larry Meu...
and Jim Smith
Test Results

Transmittal Form

Joseph P. McCabe, Inc.
509 East First Street
So. Boston, MA 02127
617-268-2030

Date: 8-27-98
Company: Harvard University
Attention: Larry Meutch
From: Jim Smith
Project name: Emerson/Robinson Drainage

Regarding: Storm Water Testing --- Test of 8-24-98

We are sending you:

	Copies	Date	Description
☐ As requested			
■ Attached			
☐ Under separate cover			

For your:

- ☐ Records
- ■ Use and information
- ☐ Approval
- ☐ Review and comment
- ☐ Use and distribution

Memo:

Via:

- ☐ Overnight mail
- ☐ Mail
- ■ Hand delivered
- ☐ Fax

Remarks:

Telefax number:

Number of pages (including this page):

Copies to: File – Larry LeVerme

Thanks – Jim Smith

Received: 08/24/98

TOXIKON CORP. REPORT 08/26/98 12:29:22

Work Order # 98-08-460

REPORT TO JOSEPH P. McCABE,INC
509 EAST FIRST STREET
SOUTH BOSTON,MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED BY TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

CERTIFIED BY

ATTEN PAUL LEZBERG
PHONE (617)275-3330

CONTACT JOHNM

CLIENT MCCABE SAMPLES 4
COMPANY JOSEPH P. McCABE,INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON,MA 02127

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIVERSITY CONST.
TAKEN 8/24/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:

SAMPLE IDENTIFICATION

01 ROBINSON 0+00 1
02 ROBINSON 0+00 2
03 PUSEY FORCE MAIN 3
04 PUSEY FORCE MAIN 4

TEST CODES and NAMES used on this workorder

F COLI FECAL COLIFORM
N AMM NITROGEN AMMONIA
T COLI TOTAL COLI (COLILERT)

TOXIKON CORP. REPORT Work Order # 98-08-460
Received: 08/24/98
Results by Sample

SAMPLE ID ROBINSON 0+00 1
FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/24/98 10:30:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	120

Notes and definitions for this report:
TEST DATE: 08/24/98
UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460

Results by Sample

SAMPLE ID ROBINSON 0+00 1 FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 08/24/98 10:30:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	11200

Notes and definitions for this report:

TEST DATE: 08/24/98

UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460
Results by Sample

SAMPLE ID ROBINSON 0+00 2 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 08/24/98 10:30:00 Category WATER

N_AMM 0.621
g/L DL=0.04

Received: 08/24/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-460

SAMPLE ID PUSEY FORCE MAIN 3

FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 08/24/98 10:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	890

Notes and definitions for this report:
TEST DATE: 08/24/98
UNITS = cfu / 100ml

Received: 08/24/98 TOXIKON CORP. REPORT Work Order # 98-08-460

Results by Sample

SAMPLE ID PUSEY FORCE MAIN 3 FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 08/24/98 10:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	27800

Notes and definitions for this report:

TEST DATE: 08/24/98

UNITS = cfu / 100ml

Received: 08/24/98

TOXIKON CORP. REPORT Work Order # 98-08-460

Results by Sample

SAMPLE ID PUSEY FORCE MAIN 4 SAMPLE # 04 FRACTIONS: A

Date & Time Collected 08/24/98 10:45:00 Category WATER

N_AMM 0.208
mg/L DL=0.04

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater. APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

98-08-460

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Laboratory: Toxikon (781) 275-3330

Sampling Frequency: ☒ Rush — 2 Day Turnaround; ☐ Routine

WORK ORDER #: 98.08.460
DUE DATE: 08.26.98

Client: Joseph P. McCabe, Inc.
Address: 509 East First Street, South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
ROBINSON Ø + ØØ (1)	1	125 ml	B	2	8/24/98	1630	None	Total Coliform, Fecal Coliform	
ROBINSON Ø + ØØ (2)	1	1 L	P	1	"	"	H2SO4	NH3	pH= 7.10
3									Temp= 18.8°C
POSEY FORCEMAIN (3)	1	125 ml	B	2	8/24/98	1045	None	Total Coliform, Fecal Coliform	
POSEY FORCEMAIN (4)	1	1 L	P	1	"	"	H2SO4	NH3	pH= 7.10
									Temp= 17.5°C

SAMPLER'S SIGNATURE	DATE	TIME
[signature]	8/24/98	1107

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	[signature]	[signature]	8-24-98	13:25
2				
3				
4				
5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

* All samples chilled to 4 degrees Celsius.

FROM : TOXIKON PHONE NO. : 6172711135 Aug. 26 1998 03:21PM P10

rec'd from Jim Smith and Larry Muench on Tues Aug 25, [illegible]

Test #3 results

Transmittal Form

Joseph P. McCabe, Inc.
509 East First Street
So. Boston, MA 02127
617-268-2030

Date: 8-25-98
Company: Harvard Univ.
Attention: Larry Meutch
From: Jim Smith
Project name: Emerson/Robinson Drainage

Regarding: Water Testing

We are sending you:

- ☐ As requested
- ■ Attached
- ☐ Under separate cover

Copies	Date	Description
1	8-24-98	Test Results

For your:

- ■ Records
- ■ Use and information
- ☐ Approval
- ☐ Review and comment
- ☐ Use and distribution

Memo:

Via:

- ☐ Overnight mail
- ☐ Mail
- ■ Hand delivered
- ☐ Fax

Remarks:

Telefax number:

Number of pages (including this page):

Copies to: File – Larry LaVerme

Thanks – Jim Smith

TOXIKON

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Celebrating 20 Years of
Excellence

FACSIMILE INSTRUCTION SHEET

Date: 8/24

Name: Andrew McCabe

Company:

Fax #:

From: Kerry C.

Total No. of Pages Including Cover Sheet: 7

If you do not receive all of the pages, please call (617) 275-3330.
Thank you. Notes:

STATEMENT OF CONFIDENTIALITY

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REMEMBER! CONTACT US IMMEDIATELY IF YOU ARE NOT THE INTENDED RECIPIENT.

15 Wiggins Avenue • Bedford, Massachusetts 01730
(781) 275-3330

Received: 08/18/98 TOXIKON CORP. REPORT Work Order # 98-08-331
08/21/98 09:55:12

REPORT TO JOSEPH P. McCABE,INC
509 EAST FIRST STREET
SOUTH BOSTON,MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED BY TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730
ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY [signature]
CONTACT JOHNM

CLIENT MCCABE SAMPLES 2
COMPANY JOSEPH P. McCABE,INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON,MA 02127

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIVERSITY CONSTRUCT
TAKEN 8/18/98
TRANS
TYPE WATER
P.O. #
INVOICE under seperate cover

VERIFIED BY: [signature]

SAMPLE IDENTIFICATION

01 ROBINSON COLLECTOR GRAB 1
02 ROBINSON COLLECTOR GRAB 2

TEST CODES and NAMES used on this workorder

F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

Received: 08/18/98 TOXIKON CORP. REPORT Work Order # 98-08-331

Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB 1 FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM

Date & Time Collected 08/18/98 08:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	2510

Notes and definitions for this report:

TEST DATE: 08/18/98

UNITS = cfu / 100ml

Received: 08/18/98 TOXIKON CORP. REPORT Work Order # 98-08-331
Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB 1 FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/18/98 08:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	112000

Notes and definitions for this report:

TEST DATE: 08/18/98

UNITS = cfu / 100ml

Received: 08/18/98 TOXIKON CORP. REPORT Work Order # 98-08-331

Results by Sample

SAMPLE ID ROBINSON COLLECTOR GRAB 2 SAMPLE # 02 FRACTIONS: A

Date & Time Collected 08/18/98 08:00:00 Category WATER

N_AMM	ND
mg/L DL=0.04	

98-08-331

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Chain of Custody Record

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: ☐ Rush ____ Day Turnaround ☒ Routine

WORK ORDER #: 98.08.331
DUE DATE: 08.31.98

ent: Joseph P. McCabe, Inc.
dress: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
ɔinson Collector Grab (1)	1	125 ml	B	2	8/18	800	None	Total Coliform, Fecal Coliform	pH= 7.45
ɔinson Collector Grab (2)	1	1 L	P	1	"	"	H2SO4	NH3	Temp=20.7°C

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	8/18/98	810	1	[signature]	A. Morles / LAB	8/18/98	12:40
			2				
			3				
			4				
			5				

litional Comments:
: Contact: Jim Smith, Cell: (617) 839-1638

* All samples chilled to 4 degrees Celsius.

recd from Larry Muench on Sept 2, 1998

TOXIKON

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Celebrating 20 Years of Excellence

FACSIMILE INSTRUCTION SHEET

Date: 9/1/98

Name: Andrew McCabe

Company: Joseph D. McCabe

Fax #:

From: Kevin Carreiro

Total No. of Pages Including Cover Sheet: 16

If you do not receive all of the pages, please call (617) 275-3330.
Thank you. Notes:

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REMEMBER! CONTACT US IMMEDIATELY IF YOU ARE NOT THE INTENDED RECIPIENT.

15 Wiggins Avenue • Bedford, Massachusetts 01730
(781) 275-3330

98-08-577

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Chain of Custody Record

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ____

Sampling Frequency: ☐ Rush ____ Day Turnaround ☐ Routine

WORK ORDER #: 98-08-577
DUE DATE: 09-11-98

Client: Joseph P. McCabe, Inc.
Address: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	Container #	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
1 Rusey Sump	1	125 ml	B	2	8/28	1130	None	Total Coliform, Fecal Coliform	pH= 7.28
2 " "	1	1 L	P	1	"	"	H2SO4	NH3	Temp= 68°F
3 Rusey Force Main	1	125 ml	B	2	8/28	1140	None	Total Coliform, Fecal Coliform	pH= 7.37
4	1	1 L	P	1	"	"	H2SO4	NH3	Temp= 69°F
5 Robinson 0700	1	125ml	B	2	8/28	1200	None	T. Col., Fecal Col.	pH= 7.61
6 "	1	1L	P	1	"	"	H_2SO_4	NH3	Temp =67°F
7 Canady	1	125ml	B	2	8/28	1210	None	T. Col, Fecal Col	pH= 9.21
8 "	1	1L	P	1	"	"	H_2SO_4	NH_3	Temp = 65°F

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	8/28/98	1300	1	[signature]	A. [signature]	8-28-98	13:15
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1636

* All samples chilled to 4 degrees Celsius.

Page 1
Received: 08/28/98

TOXIKON CORP.
REPORT
09/01/98 09:06:09

Work Order # 98-08-577

REPORT JOSEPH P. McCABE INC
TO 509 EAST FIRST STREET
SOUTH BOSTON,MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED TOXIKON CORPORATION
BY 15 WIGGINS AVE
BEDFORD, MA 01730

ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY

CONTACT JOHNN

CLIENT MCCABE SAMPLES 8
COMPANY JOSEPH P. McCABE,INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON,MA 02127

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs , CT DHS PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIVERSITY CONSTRUC
TAKEN 8/28/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:

SAMPLE IDENTIFICATION
01 PUSEY SUMP
02 PUSEY SUMP
03 PUSEY FORCE MAIN
04 PUSEY FORCE MAIN
05 ROBINSON 0+00
06 ROBINSON 0+00
07 CANADY
08 CANADY

TEST CODES and NAMES used on this workorder
F COLI FECAL COLIFORM
N AMM NITROGEN AMMONIA
T COLI TOTAL COLI (COLILERT)

Received: 08/28/98

TURIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID PUSEY SUMP

FRACTION 01A TEST CODE E COLI NAME FECAL COLIFORM

Date & Time Collected 08/28/98 11:30:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	90

Notes and definitions for this report:

TEST DATE: 08/28/98

UNITS = cfu / 100ml

Page 3
Received: 08/28/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID PUSEY SUMP

FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/28/98 11:30:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	54000

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

TOXIKON CORP. REPORT

Received: 08/28/98

Results by Sample

Work Order # 98-08-577

SAMPLE ID PUSEY SUMP

SAMPLE # 02 FRACTIONS: A

Date & Time Collected 08/28/98 11:30:00 Category WATER

N_AMM ND

mg/L DL=0.06

Page 5
Received: 08/28/98

TOXIKON CORP. REPORT Work Order # 98-08-577
Results by Sample

SAMPLE ID PUSEY FORCE MAIN

FRACTION 03A TEST CODE E COLI NAME FECAL COLIFORM
Date & Time Collected 08/28/98 11:40:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM........................	1530

Notes and definitions for this report:

TEST DATE: 08/28/98

UNITS = cfu / 100ml

Received: 08/28/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID PUDEY FORCE MAIN

FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/28/98 11:40:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	16000

Notes and definitions for this report:

TEST DATE: 08/28/98

UNITS = cfu / 100ml

Received: 08/28/98 TOXIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID PUSEY FORCE MAIN SAMPLE # 06 FRACTIONS: A

Date & Time Collected 08/28/98 11:40:00 Category WATER

N_AMM ND

mg/L DL=0.06

Page 8
Received: 08/28/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID ROBINSON 0+00

FRACTION 05A TEST CODE E COLI NAME FECAL COLIFORM
Date & Time Collected 08/28/98 12:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....................	420

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Page 9
Received: 08/28/98

TOXIKON CORP. REPORT Work Order # 98-08-577
Results by Sample

SAMPLE ID ROBINSON 0+00
FRACTION 05A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/28/98 12:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	61000

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Received: 08/28/98

TOXIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID ROBINSON 0+00 SAMPLE # 06 FRACTIONS: A

Date & Time Collected 08/28/98 12:00:00 Category WATER

U_ASM ND

mg/L DL=0.06

Received: 08/28/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID CBMA07 FRACTION 07A TEST CODE # COLI NAME FECAL COLIFORM
Date & Time Collected 08/28/98 12:10:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Received: 08/28/98

TOXIKON CORP. REPORT
Results by Sample

Work Order # 98-08-577

SAMPLE ID CANADY

FRACTION 07A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 08/28/98 12:10:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	80

Notes and definitions for this report:
TEST DATE: 08/28/98
UNITS = cfu / 100ml

Received: 08/28/98

TOXIKON CORP. REPORT Work Order # 98-08-577

Results by Sample

SAMPLE ID CANADY SAMPLE # 08 FRACTIONS: A

Date & Time Collected 08/28/98 12:10:00 Category WATER

N_AMM 0.068

mg/L DL=0.04

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination
of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA
Washington D.C.

10/27/98 17:14 ☎6174961669 ENG & UTIL

ENGINEERING & UTILITIES

FACSIMILE TRANSMITTAL SHEET

TO: Larry Loverme	FROM: Larry Muench
COMPANY: Cambridge DPW	DATE: October 27, 1998
FAX NUMBER: 617-349-4868	TOTAL NO. OF PAGES INCLUDING COVER: 10
PHONE NUMBER: 617-349-4848	SENDER'S REFERENCE NUMBER:
RE: Harvard University Storm Drain Project	YOUR REFERENCE NUMBER:

☐ FOR YOUR INFORMATION ☒ FOR REVIEW ☒ PLEASE COMMENT ☐ PLEASE REPLY

NOTES/COMMENTS

Larry,

Attached please find the storm drainage test results for the Emerson/Robinson Storm Drainage Project taken 10-14-98.

Test samples were taken at the same three locations as the previous test (Robinson 0+00, Pusey Forced Main, Pusey Sump) and the results for this test were very favorable. The Fecal Coliform count at all three locations were below the 200-cfu/100ml limit.

For these tests, EST used a sterile sample collection tube at each test location, three tubes in all. The tubes, which resembled two-foot long fluorescent light bulbs, were in sealed plastic packages from the supplier. I felt that these collection containers were a vast improvement in terms of sterilization to the past containers used for previous tests. However, the configuration of these tubes made it very difficult to obtain a large sample at Robinson 0+00 where the water level was very low, and at the Pusey Forced Main where the water discharged from the 4 inch pipe at a high flow rate. The collector obtained only enough water for a fecal coliform test at Robinson 0+00, and only enough water for fecal coliform and total coliform tests at Pusey forced main. A large enough quantity was obtained at Pusey Sump to perform all three tests.

I will schedule the next series of tests for sometime in mid-November, and will contact you with the planned date. I am planning to use a different sampling agency and testing lab as the new collection devices used by EST are not well suited to my test sources. Please call me if you have any questions on these test results or if you have any other questions.

50 CHURCH STREET, 4TH FLOOR, CAMBRIDGE, MA 02138
TEL. 617.496.5090 FAX 617.496.1669

Page 1 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 10/21/98 14:07:54

REPORT TO: HARVARD UNIVERSITY ENG.
50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139
617-495-5560
ATTEN LARRY MUENCH

PREPARED BY: TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY
CONTACT JAYSON

CLIENT HARVARD UNIV SAMPLES 3
COMPANY HARVARD UNIVERSITY ENG
FACILITY 50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS. DEMAND. O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIV. CONSTRUCTION
TAKEN 10/14/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:
CERT#MMA064

SAMPLE IDENTIFICATION	
01	ROBINSON 0+00
02	PUSEY SUMP
03	PUSEY FORCE MAIN

TEST CODES and NAMES used on this workorder	
F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

Received: 10/14/98
Results by Sample

SAMPLE ID ROBINSON 0+00 FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:10:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:

TEST DATE: 10/15/98

UNITS = cfu / 100ml

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP SAMPLE # 02 FRACTIONS: A

Date & Time Collected 10/14/98 13:45:00 Category WATER

N_AMM ND

mg/L DL=0.04

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP FRACTION 02A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM....................	60

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

 TOXIKON CORP. REPORT Work Order # 98-10-276

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP FRACTION 02A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 10/14/98 13:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	300

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

Received: 10/14/98

Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM

Date & Time Collected 10/14/98 13:25:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	10

Notes and definitions for this report:

TEST DATE: 10/15/98

UNITS = cfu / 100ml

Page 7 TOXIKON CORP. REPORT Work Order # 98-10-276

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 10/14/98 13:25:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	110

Notes and definitions for this report:

TEST DATE: 10/15/98

UNITS = cfu / 100ml

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater. APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

98-10-276

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: ☐ Rush ____ Day Turnaround ☐ Routine

WORK ORDER #: 98.10.276
DUE DATE: 10.28.98

Client: Harvard University Engineering & Utilities
Address: 50 Church Street, 4th Floor
Cambridge MA 02139-

Contact Name: Larry Muench
Phone Number: (617) 495-5560
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	Container #	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
ROBINSON 0700 (1)	1	125 ml	B	2	10/14	1310	None	~~Total Coliform~~, Fecal Coliform	pH= 8.06
	~~1~~	~~1 L~~	~~P~~	~~1~~	~~10/14~~	~~1310~~	~~H2SO4~~	~~NH3~~	Temp= 15.7°C
PUSEY SUMP (2) (3)	1	125 ml	B	2	↓	~~1325~~ 1345	None	Total Coliform, Fecal Coliform	pH= 7.62
	1	1 L	P	1	↓	~~1325~~ 1345	H2SO4	NH3	Temp= 17.7°C
PUSEY FORCE MAIN (4)	1	125 ml	B	2	↓	~~1345~~ 1325	None	Total Coliform, Fecal Coliform	pH= 7.79
	~~1~~	~~1 L~~	~~P~~	~~1~~	↓	~~1345~~	~~H2SO4~~	~~NH3~~	Temp= 16.5°C

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
Greg Cataldo	10/14/98	1345	1	Greg Cataldo	[signature]	10-14-98	17:30
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

R-7

* All samples chilled to 4 degrees Celsius.

10/27/98 17:17 ☎6174961669 ENG & UTIL ☑010

TRANSMITTAL SHEET

Environmental Services **CDM**

Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, Massachusetts 02142
Phone (617) 252-8000
Fax: (617) 621-2565

Date: November 24, 1998
Job: Harvard University
Emerson Robinson Storm Drains
Record Drawings

To: Cambridge DPW
147 Hampshire Street
Cambridge, Massachusetts 02139
Att. Larry LoVerme

We are sending

- herewith [X]
- separate cover [ ]
- by messenger [ ]

1 Print(s) each of the following: Copy of final record drawings for Emerson-Robinson Storm Drain Project Harvard University.

which are

- approved [ ]
- as noted [ ]
- returned [ ]
- for your info [X]
- .... [ ]

Please call me if you have any questions or comments on the above.

By [signature]

Matthew J. Eastwood, P.E.

TRANSMITTAL SHEET

Environmental Services **CDM**

Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, Massachusetts 02142
Phone (617) 252-8000
Fax: (617) 621-2565

Date: November 24, 1998
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To: Cambridge DPW
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- herewith [X]
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1 Print(s) each of the following: Copy of final record drawings for Emerson-Robinson Storm Drain Project Harvard University.

which are

- approved [ ]
- as noted [ ]
- returned [ ]
- for your info [X]
- [ ]

Please call me if you have any questions or comments on the above.

By [signature]
Matthew J. Eastwood, P.E.

HARVARD UNIVERSITY

ENGINEERING AND UTILITIES
A University Operations Services Group

September 8, 1998

The Cambridge Department of Public Works
Mr. Owen O'Riordan
Sewer Division Supervisor
147 Hampshire Street
Cambridge, MA 02139

Re: Harvard University Storm Drainage Project

Dear Mr. O'Riordan:

This letter is in regard to my meeting with Mr. Larry Loverme on Wednesday September 2, 1998 concerning the Harvard University Storm Drainage Project. The topic of discussion was the most recent water test results for the new storm drainage system, in particular the test results for the Pusey Library forced main at Manhole J, and the proposed connection to the Cambridge system.

Harvard University has completed the installation of the storm drainage system including all inlet piping connections. We initiated flushing of the 6 inch forced main piping from the storm drainage sump in Pusey Library to the piping connection in Manhole J with the effluent being pumped to the sanitary waste system from Manhole 0+00. We propose that continued flushing will remove any residual contamination in the pipeline, which may have been evident in the test results.

As approved by Mr. Loverme, Harvard University directed its contractor to make the final connection to the Cambridge Storm Drainage System on Friday 9-4-98. This was done with the understanding that the permit is conditional upon testing of the system as follows:

Monthly testing for the next three months at:

(a) Pusey Library sump
(b) Pusey forced main effluent at Manhole J
(c) Manhole 0+00

Should the test results be unacceptable to you after the 3 tests, Harvard University will excavate as needed to connect the forced main to the sanitary waste system.

We look forward to your comments and thank you for your continuing assistance to Harvard University on this storm drainage project.

Sincerely,

JL Muench

J. Lawrence Muench
Harvard Engineering & Utilities

cc: Larry Loverme, Cambridge DPW
Douglas Garron, Harvard

50 Church Street
Cambridge MA 02138

Facsimile 617 496.1669

THE WORKS

1998 Street Opening Permit
City of Cambridge
Department of Public Works

PermitNo: 826

DateEntered: 7/7/98

This permit is effective from 6/30/98 up to and including 9/4/98

McCabe is hereby authorized to open, occupy, obstruct and encumber a space in front of Harvard Yard (private proper for the purpose of Storm drain tie in occurred 9/4/98

In compliance with the Manual on Uniform Traffic Control Devices (MUTCD) and ensuring that all fire hyrdrants and catch basins are unobstructed.

Said permittee to complete permanent patching in compliance with City of Cambridge Standards before last date mentioned above.

Comments:

All work will be done on private property, sewer inspection req. permit is conditional upon testing the system on a monthly basis for the next 3 mos. At the following loca. Pusey Library sump, Pusey at manhole J, manhole a station 0+00 (Robinson Hall)

Permittee is required to obtain permission from the Departments indicated below:

Traffic: Yes Police: Yes Water: No InspectionalServices: No

DigSafe#

CityContract ☐

Ralph E. Dunphy
Commissioner of Public Works

Permit Issued By

Signature of Permittee

349-4845
Call For Inspection

This permit is valid from 7 A.M. to 6 P.M., Monday through Friday, ONLY. Saturday work requires approval from the Cambridge Department of Public Works. Please call Cambridge Police at 349-3352 for information on Sunday permits.

Permittee is held responsible for any damages incurred as it pertains to this permit. Permittee shall contact Cambridge Public Works at the above "Call For Inspection" number 24 hours in advance of work to schedule an inspection.

THE WORKS

1998 Street Opening Permit
City of Cambridge
Department of Public Works

PermitNo: 826

DateEntered: 7/7/98

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Comments:

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Traffic: Yes Police: Yes Water: No InspectionalServices: No

DigSafe#

CityContract ☐

Ralph E. Dunphy
Commissioner of Public Works

Permit Issued By

Signature of Permittee

349-4845
Call For Inspection

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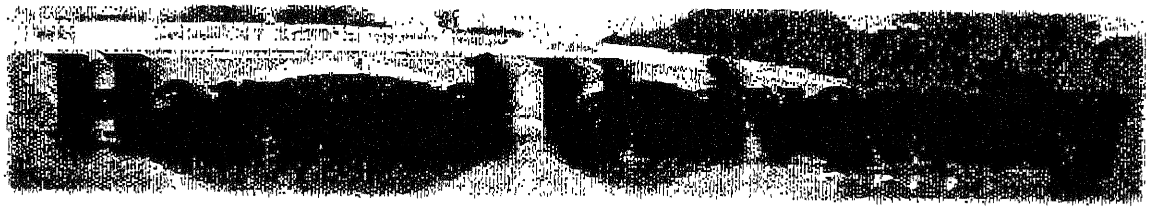


ENGINEERING & UTILITIES

FACSIMILE TRANSMITTAL SHEET

TO: Larry Loverme	FROM: Larry Muench
COMPANY: Cambridge DPW	DATE: October 27, 1998
FAX NUMBER: 617-349-4868	TOTAL NO. OF PAGES INCLUDING COVER: 10
PHONE NUMBER: 617-349-4848	SENDER'S REFERENCE NUMBER:
RE: Harvard University Storm Drain Project	YOUR REFERENCE NUMBER:

☐ FOR YOUR INFORMATION ☒ FOR REVIEW ☒ PLEASE COMMENT ☐ PLEASE REPLY

NOTES/COMMENTS

Larry;

Attached please find the storm drainage test results for the Emerson/Robinson Storm Drainage Project taken 10-14-98.

Test samples were taken at the same three locations as the previous test (Robinson 0+00, Pusey Forced Main, Pusey Sump) and the results for this test were very favorable. The Fecal Coliform count at all three locations were below the 200-cfu/100ml limit.

For these tests, EST used a sterile sample collection tube at each test location, three tubes in all. The tubes, which resembled two-foot long fluorescent light bulbs, were in sealed plastic packages from the supplier. I felt that these collection containers were a vast improvement in terms of sterilization to the past containers used for previous tests. However, the configuration of these tubes made it very difficult to obtain a large sample at Robinson 0+00 where the water level was very low, and at the Pusey Forced Main where the water discharged from the 4 inch pipe at a high flow rate. The collector obtained only enough water for a fecal coliform test at Robinson 0+00, and only enough water for fecal coliform and total coliform tests at Pusey forced main. A large enough quantity was obtained at Pusey Sump to perform all three tests.

I will schedule the next series of tests for sometime in mid-November, and will contact you with the planned date. I am planning to use a different sampling agency and testing lab as the new collection devices used by EST are not well suited to my test sources. Please call me if you have any questions on these test results or if you have any other questions.

50 CHURCH STREET, 4TH FLOOR, CAMBRIDGE, MA 02138
TEL. 617.496.5090 FAX 617.496.1669

 TOXIKON CORP. REPORT Work Order # 98-10-276

Received: 10/14/98 10/21/98 14:07:54

REPORT TO HARVARD UNIVERSITY ENG.
50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139
617-495-5560
ATTEN LARRY MUENCH

PREPARED BY TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730

ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY
CONTACT JAYSON

CLIENT HARVARD UNIV SAMPLES 3
COMPANY HARVARD UNIVERSITY ENG
FACILITY 50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS. DEMAND. O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIV. CONSTRUCTION
TAKEN 10/14/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:
CERT#MMA064

SAMPLE IDENTIFICATION	
01	ROBINSON 0+00
02	PUSEY SUMP
03	PUSEY FORCE MAIN

TEST CODES and NAMES used on this workorder	
F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

Received: 10/14/98 Results by Sample

SAMPLE ID ROBINSON 0+00 FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:10:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	<10

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

 TOXIKON CORP. REPORT Work Order # 98-10-276

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP SAMPLE # 02 FRACTIONS: A

Date & Time Collected 10/14/98 13:45:00 Category WATER

N_AMM	ND
mg/L DL=0.04	

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP FRACTION 02A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	60

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

 TOXIKON CORP. REPORT Work Order # 98-10-276

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP FRACTION 02A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 10/14/98 13:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	300

Notes and definitions for this report:

TEST DATE: 10/15/98

UNITS = cfu / 100ml

 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:25:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	10

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 10/14/98 13:25:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	110

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

98-10-276

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ________

Sampling Frequency: ☐ Rush ____Day Turnaround ☐ Routine

WORK ORDER #: 98.10.276
DUE DATE 10.28.98

Client: Harvard University Engineering & Utilities
Address: 50 Church Street, 4th Floor
Cambridge MA 02139-

Contact Name: Larry Muench
Phone Number: (617) 495-5560
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
Robinson 0780 (1)	1	125 ml	B	~~2~~ 1	10/14	1310	None	~~Total Coliform~~, Fecal Coliform	pH= 8.06
	~~1~~	~~1L~~	~~P~~	~~1~~	~~10/14~~	~~1310~~	~~H2SO4~~	~~NH3~~	Temp= 15.7°C
Pusey Sump (2) (3)	1	125 ml	B	2	↓	~~1325~~ 1345	None	Total Coliform, Fecal Coliform	pH= 7.62
	1	1 L	P	1		~~1325~~ 1345	H2SO4	NH3	Temp= 17.7°C
Pusey Force Main (4)	1	125 ml	B	2		~~1345~~ 1325	None	Total Coliform, Fecal Coliform	pH= 7.79
	~~1~~	~~1L~~	~~P~~	~~1~~	↓	~~1345~~	~~H2SO4~~	~~NH3~~	Temp= 16.5°C

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
Greg Cataldo	10/14/98	1315	1	Greg Cataldo	[illegible signature]	10-14-98	17:30
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

R-7

* All samples chilled to 4 degrees Celsius.

recd from Larry Muench Harvard University on Tues Aug 11, 1998

Test #1 Results

Page 1 TOXIKON CORP. REPORT Work Order # 98-07-558

Received: 07/30/98 08/05/98 10:48:52

REPORT TO: JOSEPH P. McCABE, INC
509 EAST FIRST STREET
SOUTH BOSTON, MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED BY: TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730
ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY [signature]

CONTACT JOHNM

CLIENT MCCABE SAMPLES 9
COMPANY JOSEPH P. McCABE, INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON, MA 02127

MA CERT # M-MA064: TRACE METALS, SULFATE CYANIDE, RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, INHS, VOC, PEST, NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIVERSITY CONSTRUCT.
TAKEN 7/30/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY: [signature]

SAMPLE IDENTIFICATION

K { 01 CBK GRAB
02 CBK GRAB }
03 ROBINSON FINAL COLL GRAB
04 ROBINSON FINAL COLL GRAB
05 PUSEY FORCE DRAIN GRAB
06 PUSEY FORCE DRAIN GRAB
07 CBK GRAB
08 ROBINSON FINAL COLL GRAB
09 PUSEY FORCE DRAIN GRAB

TEST CODES and NAMES used on this workorder

FL	FLUORIDE
F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

SAMPLE ID CBK GRAB FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 07/30/98 11:20:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	50

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Received: 07/30/98 Results by Sample

SAMPLE ID CBK GRAB FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 07/30/98 11:20:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	5200

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Received: 07/30/98 Results by Sample

SAMPLE ID CBK GRAB SAMPLE # 02 FRACTIONS: A

Date & Time Collected 07/30/98 11:20:00 Category WATER

N_AMM 0.212
mg/L DL=0.06

 TOXIKON CORP. REPORT Work Order # 98-07-558

Received: 07/30/98 Results by Sample

SAMPLE ID ROBINSON FINAL COLL GRAB FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM

Date & Time Collected 07/30/98 12:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	1070

Notes and definitions for this report:

TEST DATE: 07/30/98

UNITS = cfu / 100ml

SAMPLE ID ROBINSON FINAL COLI GRAB FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 07/30/98 12:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	4200

Notes and definitions for this report:

TEST DATE: 07/30/98

UNITS = cfu / 100ml

Received: 07/30/98 Results by Sample

SAMPLE ID ROBINSON FINAL COLL GRAB SAMPLE # 04 FRACTIONS: A

Date & Time Collected 07/30/98 12:00:00 Category WATER

N_AMM 0.513
mg/L DL=0.04

SAMPLE ID PUSEY FORCE DRAIN GRAB FRACTION 05A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 07/30/98 11:60:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM..................	3900

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

 TOXIKON CORP. REPORT Work Order # 98-07-558

Received: 07/30/98 Results by Sample

SAMPLE ID PUREY FORCE DRAIN GRAB FRACTION 02A TEST CODE T COLI NAME TOTAL COLI (COLILERT)

Date & Time Collected 07/30/98 11:40:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM..................	12800

Notes and definitions for this report:

TEST DATE: 07/30/98

UNITS = cfu / 100ml

Received: 07/30/98

Results by Sample

SAMPLE ID PUSEY FORCE DRAIN GRAB SAMPLE # 06 FRACTIONS: A
Date & Time Collected 07/30/98 11:40:00 Category WATER

N_AMM 0.330
mg/L DL=0.04

SAMPLE ID CBK GRAB SAMPLE # 07 FRACTIONS: A
Date & Time Collected 07/30/98 11:20:00 Category WATER

FL 0.52
mg/L DL=0.1

SAMPLE ID ROBINSON FINAL COLL GRAB SAMPLE # 08 FRACTIONS: A
Date & Time Collected 07/30/98 12:00:00 Category WATER

FL 0.50
mg/L DL=0.1

SAMPLE ID PUSEY FORCE DRAIN GRAB SAMPLE # 09 FRACTIONS: A
Date & Time Collected 07/30/98 11:40:00 Category WATER

FL 0.48
mg/L DL=0.1

TEST CODE FL NAME FLUORIDE

EPA METHOD: 340.2

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination
of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA
Washington D.C.

98-07-558

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other ______

Sampling Frequency: [X] Rush 3 Day Turnaround [ ] Routine *rush

Client: Joseph P. McCabe, Inc.
Address: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe
Phone Number: (617) 268-2030
Description: Harvard University Construction

WORK ORDER #: 98.07.558
DUE DATE: 08.04.98

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	#	Sampling Date	Sampling Time	Preservative	Analysis	Comments
~~Drain Line Grab~~ CBK grab	1	125 ml	B	1	7/30	1120	None	Total Coliform, Fecal Coliform CBK	pH= 5.61
~~Drain Line Grab~~ CBK grab	1	250	P	1	"	"	H2SO4	NH3	Temp= 25.4°C
Robinson Final Coll. grab	1	125ml	B	1	"	1200	None	Tot. Coliform, Fecal / Robinson	pH= 8.03
Robinson Final Coll. grab	1	250	P	1	"	"	H_2SO_4	NH_3	Temp= 20.8°C
Pusey Force Drain grab	1	125ml	B	1	"	1140	None	Tot. Coliform, Fecal / Pusey	pH= 7.33
Pusey Force Drain grab	1	250	P	1	"	"	H_2SO_4	NH_3	Temp= 21.8°C
CBK grab	1	250	P	1	"	1120	None	Flouride	
Robinson Final Coll. grab	1	250	P	1	"	1200	None	Flouride	
Pusey Force Drain grab	1	250	P	1	"	1140	None	Flouride	

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
[signature]	7/30/98	1220	1	[signature] 7/30/98 1415	[signature]	7-30-98	14:15
			2				
			3				
			4				
			5				

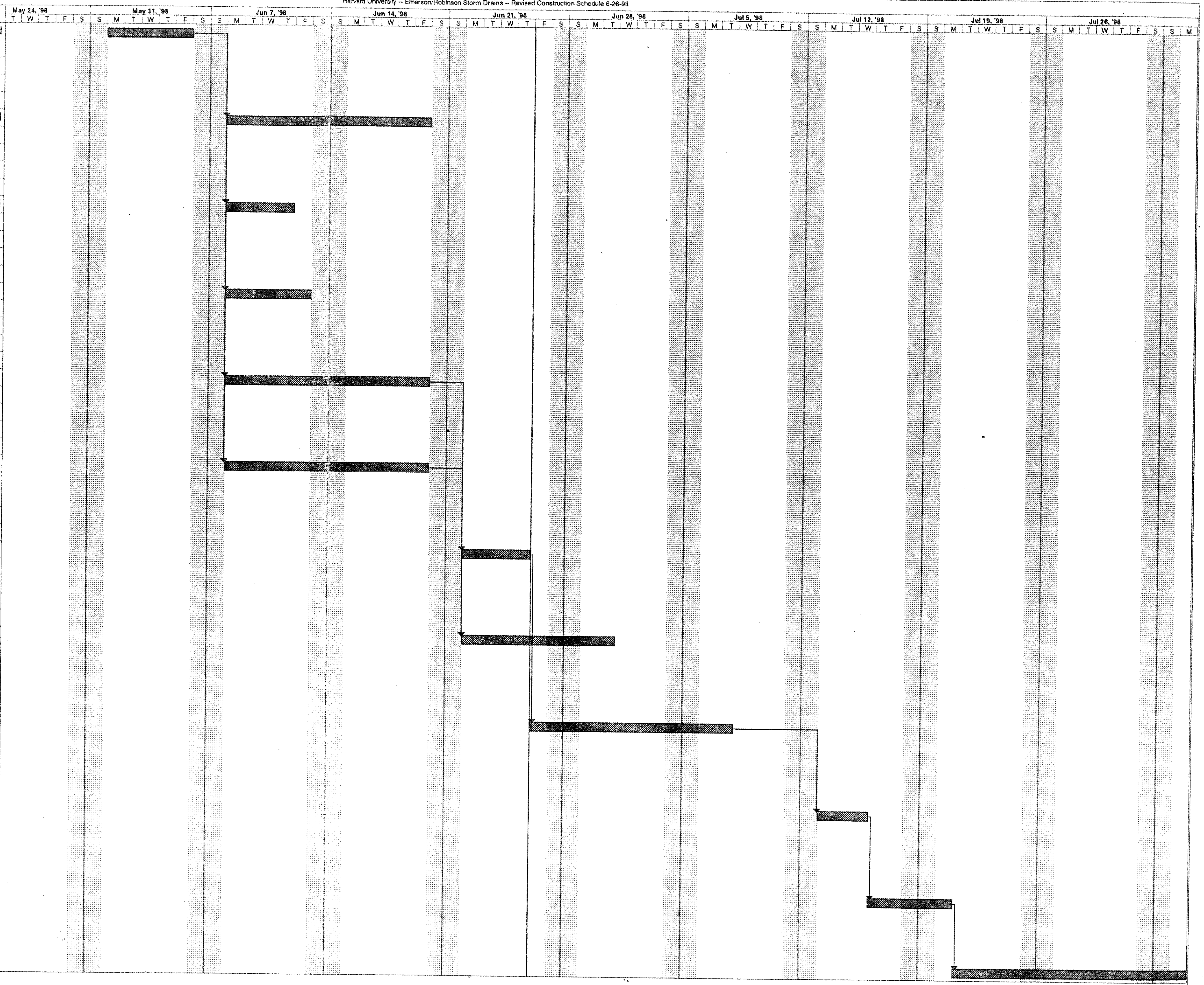
Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

R-T

* All samples chilled to 4 degrees Celsius.

Harvard University -- Emerson/Robinson Storm Drains -- Revised Construction Schedule 6-26-98

ID	Task Name	Duration
1	General Mobilization	5d
2		
3		
4		
5		
6	Preconst. Video & Surveys	10d
7		
8		
9		
10		
11	Const. @ Laydown	4d
12		
13		
14		
15		
16	Install @ K to L	5d
17		
18		
19		
20		
21	Install @ G to H	10d
22		
23		
24		
25		
26	Install B to C @ Canady(ALT)	10d
27		
28		
29		
30		
31	Install M to G @ Memorial	4d
32		
33		
34		
35		
36	Install H to K - Sever - Emsn.	7d
37		
38		
39		
40		
41	Install 24" Main - Exist To B	8d
42		
43		
44		
45		
46	Install Tie-n @ Sever	3d
47		
48		
49		
50		
51	Install Tie - In's @ Canady	3d
52		
53		
54		
55	Final Paving & Cleanup	10d



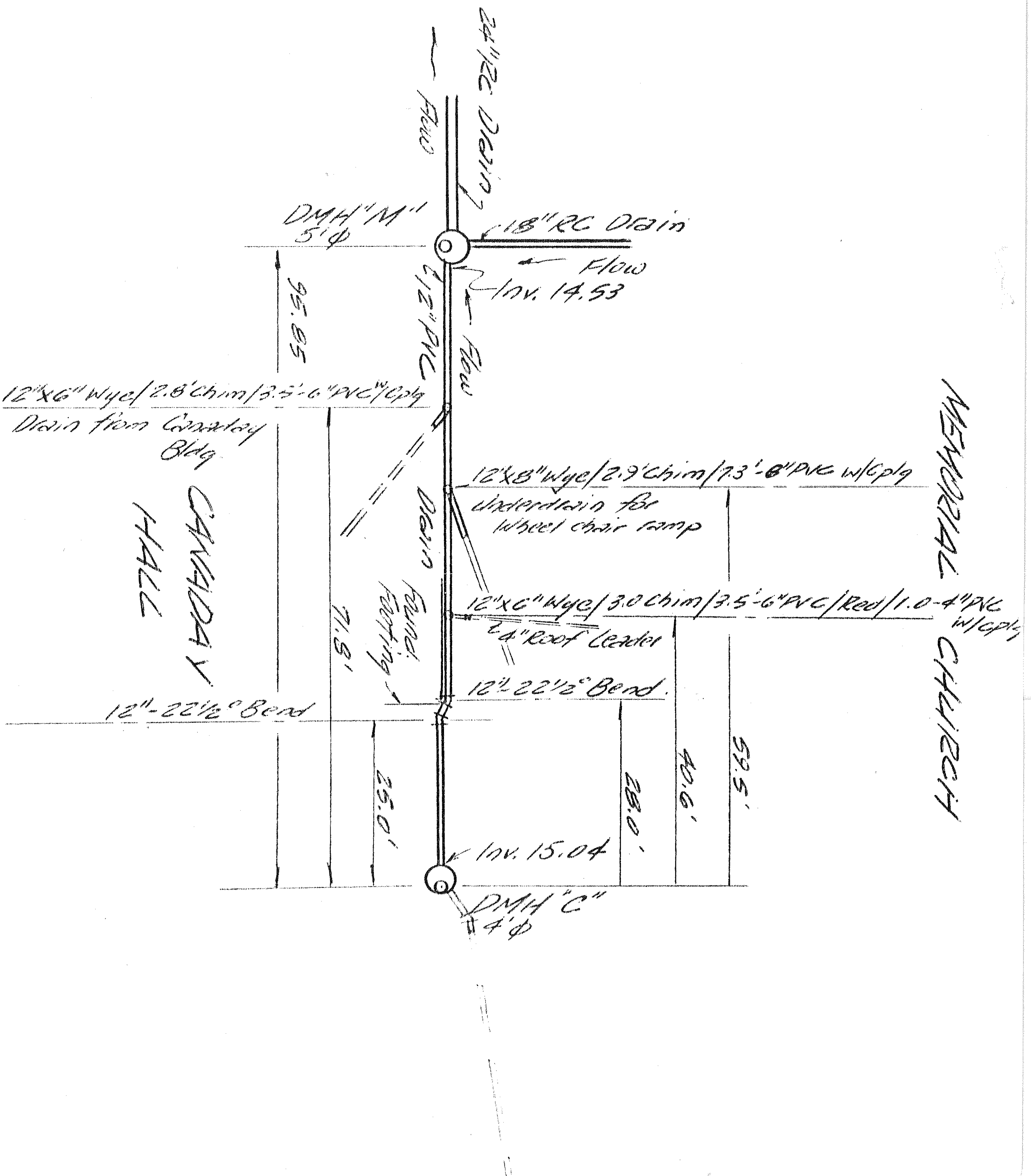
Project:
Date: 6/26/98

Task | Progress | Milestone ◆ | Summary | Rolled Up Task | Rolled Up Milestone ◇ | Rolled Up Progress

Joseph P. McCabe Inc. 509 East First St. - South Boston, Ma. 02127]

CAMP DRESSER & McKEE

CLIENT Harvard University JOB NO. COMPUTED BY GPM

PROJECT Emerson/Robinson DATE CHECKED DATE June 1998

DETAIL As Builts CHECKED BY PAGE NO. 1